UNECE Campaign to reach 500 PPPs for the SDGs case studies

Database of case studies*

*A total of 32 case studies were received by the UNECE secretariat for the 8th edition of the UNECE International PPP Forum (Istanbul, Türkiye, 8-10 May 2024) and 19 were added to the UNECE database of case study material. The case studies are being published as received directly from the contributors and were self-assessed using the *UNECE PPP and Infrastructure Evaluation and Rating System (PIERS): An Evaluation Methodology for the SDGs*. The UNECE database contains case studies from all over the world that aspire to meet the UNECE five PPP desirable outcomes for the SDGs.

8th edition of the

UNECE International PPP Forum

8-10 MAY 2024 I ISTANBUL I TÜRKIYE

UNECE

Public-Private Partnerships for the Sustainable Development Goals

8th International UNECE PPP Forum

Compendium of case studies

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02. Brazil	Smart Goiania PPP
03. Brazil	Smart Maceio PPP
04. Brazil	Integrated Sanitation PPP
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18. Ukraine	New Multidisciplinary Hospital in Zhytomyr
19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

Córdoba Clúster

Agencia Competitividad Córdoba

UNECE

Córdoba Clúster
Córdoba, Argentina

Project Proponent	Competitiveness Agency Córdoba- Córdoba Cluster Program
Sector:	Public-Private
Public Organization:	Competitiveness Agency Córdoba
Private Organization:	16 Clusters in the Province of Córdoba.
Capital Providers:	50% contributions from the province, 50% contributions from the clusters
CapEx estimado USD	$280.000 (annual)
Project Phase:	Execution Phase

Córdoba Clúster

Where:

Peanut Sector: Central-southern region of the province of Córdoba.
Automotive Sector: Central Córdoba.
Agricultural Machinery Sector: Eastern Córdoba.
Services Sector: Central Córdoba.
Agroindustrial Sector: Central and southeast Córdoba.
Knowledge Economy Sector: Throughout the province.
Energy Efficiency and Recycling Sector: Throughout the province.
Creative and Cultural Industries Sector: Throughout the province.

Why:

The Córdoba Cluster Program arises as a response to the need to drive sustainable economic development in the province. Prior to the project's initiation, productive sectors and value chains requiring improvements were identified to enhance growth and competitiveness. During the feasibility phase, key issues related to the creation and consolidation of clusters in strategic sectors for local economies were studied. The choice of a Public-Private Partnership (PPP) was based on the necessity to coordinate efforts among the public, private, and academic sectors to achieve a significant and sustainable impact on the production chain and to foster cooperation among actors and companies involved in each sector.

What:

The Córdoba Cluster Project aims to achieve significant social and/or environmental impacts. It anticipates improving social conditions by generating employment and strengthening local communities. In environmental terms, the project seeks to promote sustainable practices and the integration of environmental criteria into cluster activities. The initiative aspires to contribute to the sustainable development of the province, balancing economic growth with social and environmental considerations, aiming for territorial competitiveness for the well-being of the community.

Córdoba Clúster

Who:

In the Córdoba Cluster Project, key stakeholders involved include the Córdoba Competitiveness Agency, other government entities, as well as companies and associations from the private sector. Tasks, risks, and responsibilities were distributed equitably; the public sector led policy formulation and provided institutional support, while the private sector focused on cluster implementation and development. Collaboration was structured to leverage the strengths of both parties, fostering joint risk management and efficient project execution.

Where:

In the province of Córdoba, as part of the configuration of the New Productive Matrix 2030, the Cluster Development policy was incorporated into the new Industrial Promotion Law No. 10,792. In September of the year 2023, it was resolved, according to Decree No. 1331/2023, that the Implementing Authority of the Cluster Development Program would be the Competitiveness Agency Córdoba S.E.M. In September 2023, the Córdoba Cluster Program was launched, providing technical and financial assistance to clusters for a period of 3 years.

How:

The Córdoba Cluster Project serves as a case study for Public-Private Partnerships (PPP) within the framework of the Sustainable Development Goals (SDGs) of the 2030 Agenda by promoting sustainable economic development in the province of Córdoba. It stands out in job creation (SDG 8), promotion of innovation (SDG 9), and establishment of effective partnerships between the public and private sectors (SDG 17). Key aspects include social strengthening through the creation of employment opportunities and economic development, while the environmental impact is presumed through sustainable practices in cluster formation. The public-private collaboration represents a 'win-win' solution, efficiently leveraging the resources and expertise of both parties to achieve a significant and sustainable impact on economic development and the attainment of the SDGs.

(i) Increasing Access to Essential Services and Promoting Equity

Within the framework of the Córdoba Cluster Project, a unique collaborative dynamic is emphasized, where clusters from specific sectors join forces to develop shared infrastructure. This strategy not only strengthens efficiency in production and distribution but also has a direct impact on equity by ensuring that the benefits of this infrastructure are accessible equitably to all participants. This innovative approach not only enhances working conditions but also contributes to broader and more equitable access to essential services, thereby reinforcing the fundamental pillars of our project.

(ii) Demonstrating Economic Efficiency and Financial Sustainability of the Project

The Córdoba Cluster Project showcases its economic and financial sustainability through an equitable co-investment model, where the private sector contributes 50%, and the public sector contributes the remaining 50%. To access these funds, clusters must be registered in the province's Cluster Registry. Resources come from both the annual public budget allocated by the government of Córdoba and additional sources, including national and international organizations.

Private funding can originate from the clusters themselves or their members, including academic institutions. Contributions may be granted after expenditure execution or through advances rendered halfway through the implementation of activities.

These funds support activities aligned with the strategic pillars of the Córdoba Cluster Program, such as internationalization, technological innovation, talent management, sustainability, and business transformation. This approach not only ensures the economic viability of the project but also drives economic and territorial development, creating quality employment and strengthening the local economy.

Córdoba Clúster

Environmental Sustainability

(iii) Developing Resilient Infrastructure and Enhancing Environmental Sustainability

The Córdoba Cluster Program emphasizes its comprehensive approach to energy efficiency, carbon footprint reduction, and circular economy, with specific projects within the energy transition and cardboard and recycling clusters. To strengthen these initiatives, training sessions have been planned, including the development of carbon footprint experts, and a diploma in Climate Ethics for local management and development has been established. Additionally, the program has implemented the Greenhouse Gas Emission Reduction and Compensation Program, a pilot experience that assesses carbon emission reductions, allowing their utilization or compensation by various actors, primarily in the public construction sector. This initiative, developed in collaboration with the Ministry of Public Services of the Province of Córdoba and other organizations, demonstrates an active commitment to mitigating environmental impacts and promoting sustainable practices at the local level.

Córdoba Clúster

Replicability

(iv) Being Replicable and Scalable

The Córdoba Cluster Program offers a replicable model that can be adapted and extended to other provinces in Argentina and internationally. The key lies in its collaborative approach, where the combination of the public, private, and academic sectors promotes the creation and consolidation of clusters in strategic areas. For national replication, the identification of sectors with interprovincial actors and the constant updating of the cluster mapping would allow the program to be adjusted to the specificities of each region. Internationally, actively seeking inter-cluster connections with other provinces and countries facilitates the global expansion of the model, promoting collaboration between regions and contributing to sustainable and competitive development on an international scale. The program's flexibility and its focus on local leadership development strengthen its capacity for adaptation and replication in various contexts.

Córdoba Clúster

Stakeholder Engagement

(v) Engaging all Stakeholders

For the development and planning of this project, initial workshops were conducted with the strategic sectors for the province, maintaining collaboration between public and private actors in the context of the planning of the Córdoba Productive Matrix 2030. This initiative, driven by the Ministry of Industry, Commerce, and Mining in conjunction with the provincial Productive Cabinet, and coordinated by the ICDA of the Catholic University of Córdoba, consisted of 12 workshops aimed at collectively constructing a new diversified industrial framework for Córdoba in the coming years. In addition to the public sector, sectorial chambers, businesses, and academia participated in these workshops.

As a result of these workshops and the cluster mapping, a total of 51 Traded Clusters were identified, competing at the local, national, regional, and global levels, concentrated in regions that offer competitive advantages for their operation, as well as 16 Local Clusters that compete and serve the domestic market, without regional concentration.

Finally, in 2022, the cluster policy was included in the Industrial Promotion Law, designating the Competitiveness Agency Córdoba as the Implementing Body. Currently, the Agency has 16 Cluster Initiatives registered in the Cluster Registry of the Province, thus consolidating legal support and the active participation of various sectors in promoting cluster development in Córdoba.

Public-Private Partnerships for the Sustainable Development Goals

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Smart Goiania PPP

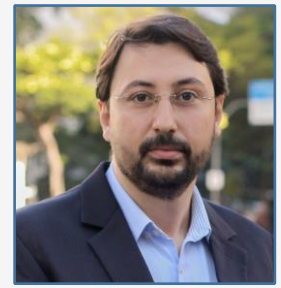
Overview

UNECE

Administrative Concession of efficiency, operation and maintenance of Public Lighting and implementation, operation and maintenance of the Photovoltaic Plant and Telecommunications Infrastructure.

Goiania, Goias, Brasil

Project Proponent:	Institute of Planning and Management of Cities (IPGC)
Sector:	Infrastructure
Public Organisation:	Goiania City Hall
Private Organisation:	Yet to be determined
Capital Providers:	The capital will come partly from the public through the monthly payment and partly from private investment
Estimated CapEx (USD)	USD 89.165.978,00
Stage of the project	Development stage



Smart Goiania PPP

Context and Strategy

UNECE

Where

Goiânia is the capital of the state of Goiás, located in the center-west of Brazil. The city has a history of 88 years, covering an area of 739.5 km², and is home to a population of approximately 1.516 million inhabitants. The city's GDP is around USD 13 billion, with services accounting for most of the added value, totaling 69.2%. Industry is next with 24.5%, followed by public administration with 5.9% and agriculture with 0.4%.

Why

The city's context demanded improvements to promote energy efficiency, completing the exchange of LED light bulbs throughout the territory, digital inclusion and security. In the viability phase, technical, financial and legal aspects were studied, focusing on integrating the proposed services into a single contract. The PPP solution was chosen because of its ability to combine private investment with technical expertise, reducing the fiscal impact and speeding up implementation, which is crucial for a project with such a broad and integrated scope.

What

The project is expected to have an impact on social indicators including access to health and education (through telemedicine and distance learning), digital inclusion (with the provision of quality public WiFi) and public safety (with video monitoring, cameras in schools and emergency totems). There are also environmental indicators, with a reduction in energy consumption and greenhouse gas emissions, as a result of the efficiency of public lighting and the production of solar energy.

Smart Goiania PPP

Context and Strategy

Who

In the Smart City project, three main actors play crucial roles. IPGC is responsible for helping to collect data, structure the technical, economic, legal and environmental viability studies, and develop the contractual modeling. The municipal government, for its part, plays a key role in gathering the data needed for the studies, understanding the main challenges facing the city and passing this information on to IPGC. In addition, a third actor, a private entity, will come into play, providing the necessary financial capital and sharing the risks with the city government in the implementation and operation of the concession, thereby completing the trio of key players in this urban and technological transformation initiative.

When

At first, there was an extensive planning process, which included understanding the reality of the municipality and identifying its main challenges. The project was then submitted to the government for analysis in order to obtain the necessary approvals. During this phase, all the costs necessary for the initial implementation and operation of the project are being taken into account. After government approval, the project will go through the bidding and private partner selection phase, culminating in commercial and financial closure. The start of operations will mark the next important stage. The contract will run for 25 years, with an administrative concession, thus guaranteeing the continuity and sustainability of the project over time.

How

The PPP has the potential to contribute significantly to the 2030 Agenda and the SDGs, especially those related to SDG 9, SDG 11, SDG 13 and SDG 7. Efficient street lighting will reduce energy consumption and carbon emissions, helping to mitigate climate change. The communication infrastructure, including the Operation Center for monitoring video surveillance cameras, a dedicated link for the city hall and public Wi-Fi in public spaces, promotes digital inclusion and public safety. The photovoltaic plant for generating energy in public buildings will reduce operating costs and promote clean energy for the community. This PPP represents a "win-win" solution, where the municipal government benefits from the expertise and financial resources of the private sector, resulting in mutual benefits for both parties and the community as a whole.

Smart Goiania PPP

Access and Equity

i) Increase access to essential services and promote equity

The Smart City PPP has significant impacts on increasing access to essential services and promoting equity. Through smart technologies and infrastructures, the project aims to improve the provision of services such as public lighting and telecommunications infrastructure, making them more accessible and efficient for all citizens, especially the most vulnerable. It also allows the city to introduce new technologies over the long term that make life easier and have a positive impact on citizens.

The project aims to provide access to a higher quality of public goods, such as public lighting, democratization of internet access and better provision of services in health posts, social assistance centers, schools, administration, facilitated by internet access, and job creation. All of these public services cover the entire population, without exception. When it comes to municipalities, for example, the improvements are not limited to urban centers, but also extend to rural areas.

This means that democratization of the internet and the security provided by efficient public lighting are guaranteed to all citizens. In addition, all these improvements result in short- and long-term savings for the Government, since cost reduction is a premise considered for the viability of the projects.

Smart Goiania PPP

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

The concession for the Goiania project has a duration of 25 years and a total investment (Capital Expenditure) of USD 89.165.978,00. The value of the contract signed with the private sector was USD 272.829.935,56 reais, with an estimated payback of 11 years.

For the economic development of the project, a value for money analysis was considered, which consists of assessing whether the PPP offers better value for the public money invested than a traditional public service provision alternative. This involves comparing the total costs of the PPP with the expected economic, social and environmental benefits, as well as considering the associated risks and how they are distributed between the parties. The analysis also includes a comparative analysis with the public alternative, taking into account the capacity of the public sector to deliver the same service or project. This assessment is fundamental to ensuring that the PPP is the most advantageous option for the public administration and for society.

The project also has various sources of funding to support it. For the public lighting part, for example, consideration is being given to the Public Lighting Contribution (CIP), which will contribute to financing this part of the project. For other areas, sources such as the Municipal Participation Fund, a source sent by the Brazilian federal government to the cities, are being considered. In addition, revenue transposition is being evaluated for the development of the studies, which consists of analyzing the municipality's previous spending on these objects, in order to optimize the PPP and make it more economical by combining objects.

In terms of local economic impact, the project will generate around 1,800 direct jobs and 860 indirect jobs. This will generate income and professionalize the local population.

Smart Goiania PPP

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

The project has sustainable development as one of its basic principles. From this perspective, through the energy efficiency and clean energy generation projects, it is possible to produce 12.329,043,08 kwh of solar energy annually and achieve a 65.71% reduction in electricity consumption. In addition, this project involves the disposal of solid waste through reverse logistics. In this way, all the outdated light bulbs replaced with LEDs, for example, are reused and recycled.

It is also worth highlighting the possibility of the municipality selling the carbon credits. The Brazilian federal government is regulating and implementing policies to encourage the sale of carbon credits as part of its efforts to combat climate change and promote environmental sustainability. In this way, the economic gains go hand in hand with the sustainability gains.

The adoption of these solutions by public entities, in addition to setting a social example by encouraging the implementation of similar projects in other Brazilian municipalities and states, expands their sustainable energy matrix, reduces energy consumption from street lighting, optimizes the spending of public resources and becomes self-sufficient in terms of its own energy demand.

With the completion of this project, Goiania will have reduced emissions by at least 23,000 tons of CO2 per year, which represents a major impact in terms of reducing the city's carbon footprint.

Smart Goiania PPP

Replicability

iv) Be replicable and scalable

In the Brazilian government, the federal entities have their own attributions with the aim of decentralizing power. The capacity and financial resources of these actors to carry out their functions is reduced, resulting in a relationship of dependence of governments on resources from the Union and difficulty in contracting services or structuring PPPs for public provision. In this context, IPGC has developed a unique method to act as a bridge between the Public Authorities and the Private Sector. Therefore, it focuses on being present from the conception of the program, through the mapping and positioning of the actors, the management of processes and costs and multidisciplinary studies, to the mediation of partnerships. The method transforms and automates proposals into an instrument for converging partnerships with comprehensive monitoring, so that projects can thrive and become sustainable. IPGC has already modeled more than 100 projects with the same scope as the Goiania Smart City PPP.

The method of using a Smart City PPP, which integrates the efficiency of public lighting, the construction of its own telecommunications infrastructure to connect various technologies and the production of its own solar energy, offers an innovative and sustainable approach for municipalities in all countries. This approach makes it possible to optimize the provision of services, improving citizens' quality of life and boosting local development. By combining energy efficiency, advanced connectivity and clean energy generation, this PPP can serve as a replicable and adaptable model, suited to the specific needs of each location, thus promoting the modernization and sustainability of cities. It is important to note that for this model to be replicable in other countries, it is essential to understand the local legislation regarding this type of contract.

This model is scalable because the PPP contract allows for the inclusion of new related scopes and the integration of new technologies that may arise during the concession. This flexibility allows the project to evolve over time, keeping pace with the city's demands and technological innovations, thus ensuring that the infrastructure and services remain up-to-date and efficient throughout the PPP's lifetime.

Smart Goiania PPP

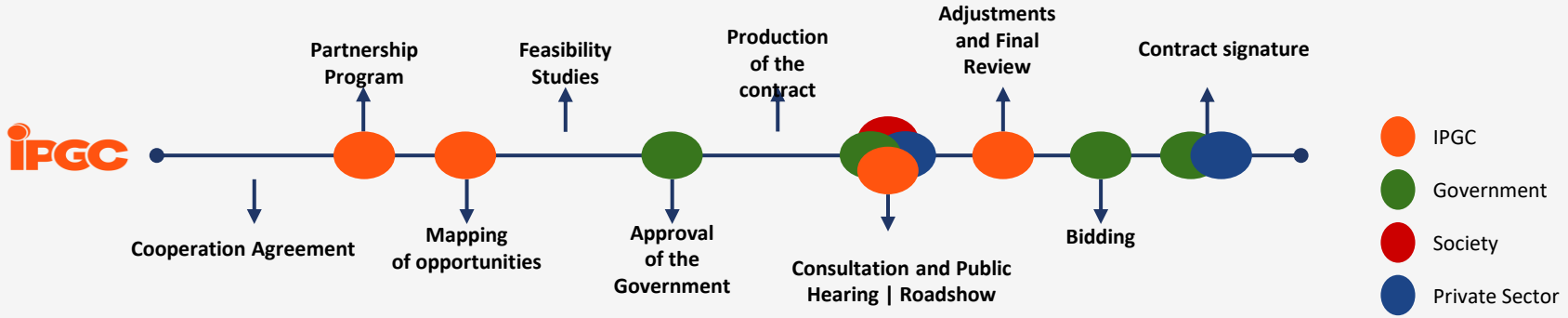
Stakeholder Engagement

v) Engage all stakeholders

In the Goiania Smart City PPP, stakeholders were involved at various stages of the project. IPGC played a crucial role in the conception and development of the project, bringing technical expertise and knowledge in urban management. Goiania City Hall, as the public promoter, was responsible for bringing popular demands and ensuring that the project met the needs of the local community.

Before the concessionaire is hired, the process will go through Public Consultation, with the participation of Civil Society and the Private Sector to provide their contributions to the project. In addition, the contractual modeling provides for the creation of a Monitoring and Management Committee, made up of government members and an independent verifier, who will monitor and verify the contractor's compliance with its contractual obligations.

The figure below demonstrates how the PPP structuring process occurs involving stakeholders.



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Smart Maceio PPP

Overview

UNECE

Administrative Concession of Georeferencing Services, efficiency, operation and maintenance of Public Lighting and implementation, operation and maintenance of the Photovoltaic Plant and Telecommunications Infrastructure.
Maceió, Alagoas, Brazil

Project Proponent:	Institute of Planning and Management of Cities (IPGC)
Sector:	Infrastructure
Public Organisation:	Maceio City Hall
Private Organisation:	Yet to be determined
Capital Providers:	The capital will come partly from the public through the monthly payment and partly from private investment
Estimated CapEx (USD)	USD 43.907.713,32
Stage of the project	Development stage

Smart Maceio PPP

Context and Strategy

UNECE

Where

Maceió is the capital of the state of Alagoas, on the east coast of Brazil. The city is 432 years old, has an area of 510 km² and a population of 957,900 inhabitants. The city's GDP is around USD 5.5 billion, 61.7% of which comes from services, followed by industry (19%), public administration (18%) and agriculture (1.4%).

Why

The municipality's context required improvements to promote energy efficiency, completing the replacement of LED light bulbs throughout the territory, digital inclusion, security and updating the territory's georeferencing. In the feasibility phase, technical, financial and legal aspects were studied, focusing on integrating the proposed services into a single contract. The PPP solution was chosen because of its ability to combine private investment with technical expertise, reducing the fiscal impact and speeding up implementation, which is crucial for a project with such wide and integrated scope.

What

The project is expected to have an impact on social indicators including access to health and education (through telemedicine and e-learning), digital inclusion (with the provision of quality public internet) and public safety (with video monitoring, cameras in schools and emergency totems). There are also environmental indicators, with a reduction in energy consumption and greenhouse gas emissions, due to the efficiency of public lighting and solar energy production.

Smart Maceio PPP

Context and Strategy

UNECE

Who

In the Smart City project, three main actors play crucial roles. IPGC is responsible for helping to collect data, structure the technical, economic, legal and environmental feasibility studies, and develop the contractual modeling. The City Administration, for its part, plays a key role in gathering the data needed for the studies, understanding the main challenges in the municipality and passing this information on to IPGC. In addition, a third actor, a private entity, will come into play, providing the necessary financial capital and sharing the risks with the Municipality in the implementation and operation of the concession, thus completing the trio of key players in this urban and technological transformation initiative.

When

At first, there was an extensive planning process, which included understanding the reality of the municipality and identifying its main challenges. The project was then submitted to the government for analysis in order to obtain the necessary approvals. During this phase, all the costs necessary for the initial implementation and operation of the project are being taken into account. After government approval, the project will go through the bidding and private partner selection phase, culminating in commercial and financial closure. The start of operations will mark the next important stage. The contract will run for 25 years, with an administrative concession, thus guaranteeing the continuity and sustainability of the project over time.

How

The PPP has the potential to contribute significantly to the 2030 Agenda and the SDGs, especially those related to SDG 9, SDG 11, SDG 13 and SDG 7. Efficient street lighting will reduce energy consumption and carbon emissions, helping to mitigate climate change. The communication infrastructure, including the Operation Center for monitoring video surveillance cameras, a dedicated link for the city hall and public Wi-Fi in public spaces, promotes digital inclusion and public safety. The photovoltaic plant for generating energy in public buildings will reduce operating costs and promote clean energy for the community. This PPP represents a "win-win" solution, where the municipal government benefits from the expertise and financial resources of the private sector, resulting in mutual benefits for both parties and the community as a whole.

Smart Maceio PPP

Access and Equity

i) Increase access to essential services and promote equity

The Smart City PPP has significant impacts on increasing access to essential services and promoting equity. Through smart technologies and infrastructures, the project aims to improve the provision of services such as public lighting and telecommunications infrastructure, making them more accessible and efficient for all citizens, especially the most vulnerable. It also allows the city to introduce new technologies over the long term that make life easier and have a positive impact on citizens.

The project aims to provide access to a higher quality of public goods, such as public lighting, democratization of internet access and better provision of services in health posts, social assistance centers, schools, administration, facilitated by internet access, and job creation. All of these public services cover the entire population, without exception. When it comes to municipalities, for example, the improvements are not limited to urban centers, but also extend to rural areas.

This means that democratization of the internet and the security provided by efficient public lighting are guaranteed to all citizens. In addition, all these improvements result in short- and long-term savings for the Government, since cost reduction is a premise considered for the viability of the projects.

Smart Maceio PPP

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

The concession for the Maceió project has a duration of 25 years and a total investment (Capital Expenditure) of USD 43.907.713,32. The value of the contract signed with the private sector was USD 3.193.488,96, with an estimated payback of 11 years.

For the economic development of the project, a value for money analysis was considered, which consists of assessing whether the PPP offers better value for the public money invested than a traditional public service provision alternative. This involves comparing the total costs of the PPP with the expected economic, social and environmental benefits, as well as considering the associated risks and how they are distributed between the parties. The analysis also includes a comparative analysis with the public alternative, taking into account the capacity of the public sector to deliver the same service or project. This assessment is fundamental to ensuring that the PPP is the most advantageous option for the public administration and for society.

The project also has various sources of funding to support it. For the public lighting part, for example, consideration is being given to the Public Lighting Contribution (CIP), which will contribute to financing this part of the project. For other areas, sources such as the Municipal Participation Fund, a source sent by the Brazilian federal government to the cities, are being considered. In addition, revenue transposition is being evaluated for the development of the studies, which consists of analyzing the municipality's previous spending on these objects, in order to optimize the PPP and make it more economical by combining objects.

In terms of local economic impact, the project will generate around 1,800 direct jobs and 860 indirect jobs. This will generate income and professionalize the local population.

Smart Maceio PPP

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

The project has sustainable development as one of its basic principles. From this perspective, through the energy efficiency and clean energy generation projects, it is possible to produce 7,545,075.97 kwh of solar energy annually and achieve a 65.75% reduction in electricity consumption. In addition, this project involves the disposal of solid waste through reverse logistics. In this way, all the outdated light bulbs replaced with LEDs, for example, are reused and recycled.

It is also worth highlighting the possibility of the municipality selling the carbon credits. The Brazilian federal government is regulating and implementing policies to encourage the sale of carbon credits as part of its efforts to combat climate change and promote environmental sustainability. In this way, the economic gains go hand in hand with the sustainability gains.

The adoption of these solutions by public entities, in addition to setting a social example by encouraging the implementation of similar projects in other Brazilian municipalities and states, expands their sustainable energy matrix, reduces energy consumption from street lighting, optimizes the spending of public resources and becomes self-sufficient in terms of its own energy demand.

With the completion of this project, Maceió will have reduced emissions by at least 14,000 tons of CO2 per year, which represents a major impact in terms of reducing the city's carbon footprint.

iv) Be replicable and scalable

In the Brazilian government, the federal entities have their own attributions with the aim of decentralizing power. The capacity and financial resources of these actors to carry out their functions is reduced, resulting in a relationship of dependence of governments on resources from the Union and difficulty in contracting services or structuring PPPs for public provision. In this context, IPGC has developed a unique method to act as a bridge between the Public Authorities and the Private Sector. Therefore, it focuses on being present from the conception of the program, through the mapping and positioning of the actors, the management of processes and costs and multidisciplinary studies, to the mediation of partnerships. The method transforms and automates proposals into an instrument for converging partnerships with comprehensive monitoring, so that projects can thrive and become sustainable. IPGC has already modeled more than 100 projects with the same scope as the Maceio Smart City PPP.

The method of using a Smart City PPP, which integrates the efficiency of public lighting, the construction of its own telecommunications infrastructure to connect various technologies and the production of its own solar energy, offers an innovative and sustainable approach for municipalities in all countries. This approach makes it possible to optimize the provision of services, improving citizens' quality of life and boosting local development. By combining energy efficiency, advanced connectivity and clean energy generation, this PPP can serve as a replicable and adaptable model, suited to the specific needs of each location, thus promoting the modernization and sustainability of cities. It is important to note that for this model to be replicable in other countries, it is essential to understand the local legislation regarding this type of contract.

This model is scalable because the PPP contract allows for the inclusion of new related scopes and the integration of new technologies that may arise during the concession. This flexibility allows the project to evolve over time, keeping pace with the city's demands and technological innovations, thus ensuring that the infrastructure and services remain up-to-date and efficient throughout the PPP's lifetime.

Smart Maceio PPP

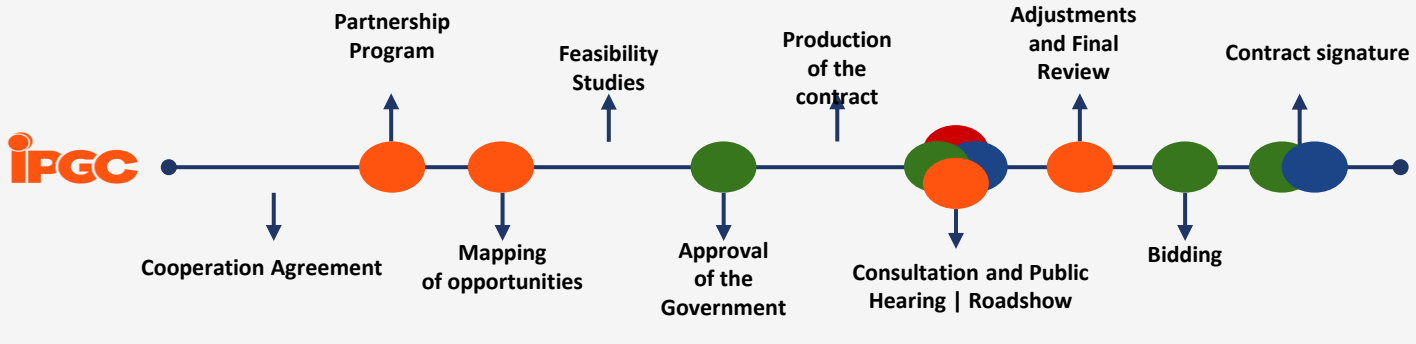
Stakeholder Engagement

v) Engage all stakeholders

In the Maceió Smart City PPP, stakeholders were involved at various stages of the project. IPGC played a crucial role in the conception and development of the project, bringing technical expertise and knowledge in urban management. Maceió City Hall, as the public promoter, was responsible for bringing popular demands and ensuring that the project met the needs of the local community.

Before the concessionaire is hired, the process will go through Public Consultation, with the participation of Civil Society and the Private Sector to provide their contributions to the project. In addition, the contractual modeling provides for the creation of a Monitoring and Management Committee, made up of government members and an independent verifier, who will monitor and verify the contractor's compliance with its contractual obligations.

The figure below demonstrates how the PPP structuring process occurs involving stakeholders.



Public-Private Partnerships for the Sustainable Development Goals

8th International UNECE PPP Forum

Compendium of case studies

UNECE

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Public-Private Partnerships
for the Sustainable Development Goals

Integrated Sanitation PPP

Overview

UNECE

Sponsored concession for the provision of public water supply, sewage and solid waste management services.

Upanema, Rio Grande do Norte - Brazil

Project Proponent:	Institute of Planning and Management of Cities (IPGC)
Sector:	Sanitation
Public Organisation:	Upanema City Hall
Private Organisation:	Yet to be determined
Capital Providers:	The capital will come partly from the public through the monthly payment, from the population through the fare, and from the private sector through investment
Estimated CapEx (USD)	USD13.029.527,35
Stage of the project	Development stage

Integrated Sanitation PPP

Context and Strategy

UNECE

Where

Upanema is a small municipality located in the state of Rio Grande do Norte, with a population of 14,800 and an area of 873 km². The municipality's GDP is 214 million, with the largest share of public administration (45%), followed by services (28%), industry (20%) and agriculture (7%).

Why

The municipality of Upanema is currently facing a precarious situation in terms of the provision of basic sanitation services, especially sewage, where less than 35% of the population has adequate access to the service. The context of the municipality demands an urgent solution to meet the Brazilian legal targets for universalization and improvement of services. In the feasibility phase, technical, financial and legal aspects were studied, focusing on integrating the proposed services into a single contract. The PPP arrangement was adopted because it enables an innovative scope by integrating water supply, sewage and solid waste management services, combining public payment and tariffs.

What

With the implementation of the project, the municipality will meet Brazil's legal targets for universalization, providing broad and efficient access to services, improving public health and creating jobs. In addition, environmental preservation will be made possible not only by expanding access to sewage collection and treatment, but also by the environmental regularization of final waste disposal. In this way, the concession of these services not only raises the community's standard of living, but also acts as a catalyst for long-term environmental conservation.

Integrated Sanitation PPP

Context and Strategy

Who

Four main actors play crucial roles in the project. IPGC is responsible for helping to collect data, structure the feasibility studies and develop the bidding and contractual modeling. The City Council, for its part, plays a key role in gathering the data needed for the studies, understanding the municipality's main bottlenecks, and analyzing and approving the material prepared. In addition, a third actor, a private entity, will come into play, providing the necessary financial capital and sharing the risks with the municipality in the implementation and operation of the concession. In addition, the population has the role of participating effectively in the consultation and public hearing, as they will be directly impacted by the provision of services.

When

The project began with an extensive data collection phase, in which the municipal reality was analyzed. Once this stage was complete, the project team set about devising the best solutions and actions to meet the demands identified, while also calculating the necessary investments and operating costs. The project was then submitted to the government for approval, so that the public consultation stage could begin. The next stage is the publication of the bidding and selection of the private partner, so that the new concessionaire can take over the services for a period of 35 years.

How

By providing access to drinking water, sanitation and waste management, the Upanema project has a direct impact on health and quality of life (SDGs 6 and 3) and promotes the construction of infrastructures for the development of sustainable societies (SDGs 9 and 11). It contributes to tackling climate change, minimizing environmental impact and reducing socio-economic inequalities (SDG 13 and 10). By improving living conditions in communities, it is aligned with poverty eradication (SDG 1). It is also linked to preventing marine pollution, soil pollution and preserving the terrestrial environment (SDGs 14 and 15) and stimulates sustainable economic growth by creating jobs (SDG 8). Thus, Upanema stands out as an example of contributing to the goals of the 2030 Agenda. This PPP represents a "win-win" solution, where the municipal government benefits from the expertise and financial resources of the private sector, resulting in mutual benefits for both parties and the community as a whole.

Integrated Sanitation PPP

Access and Equity

UNECE

i) Increase access to essential services and promote equity

One of the goals of the Upanema project is to promote the expansion, implementation and maintenance of the infrastructures needed to guarantee the proper performance of the services and the expansion of the service areas, promoting the inclusion of the municipality's headquarters and rural locations in the concession area. In addition, the project was designed taking into account the targets established under current national laws, which have the principle of achieving universalization of services, promoting environmental preservation and improving the population's quality of life, contributing to meeting the UN's Sustainable Development Goals.

In this sense, Remuneration through tariffs with specific categories is of fundamental importance in the context of the municipality of Upanema. By classifying users into different categories, taking into account existing social stratifications such as income and specific needs, tariffs become a crucial tool for ensuring accessibility to essential services. The existence of social and popular tariffs further amplifies this impact, reinforcing the project's commitment to a fairer society. In addition, the monthly payment from the public administration helps to make the fare more accessible to the population as a whole, promoting equitable access to the service.

Integrated Sanitation PPP

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

The concession for the Upanema project has a duration of 35 years and a total investment (Capital Expenditure) of USD 13,029,527.35. The value of the contract signed with the private sector was USD 1,295,821,887.525151 reais, with an estimated payback of 8 years.

For the economic development of the project, a value for money analysis was considered, which consists of assessing whether the PPP offers better value for the public money invested than a traditional public service provision alternative. This involves comparing the total costs of the PPP with the expected economic, social and environmental benefits, as well as considering the associated risks and how they are distributed between the parties. The analysis also includes a comparison with the public alternative, taking into account the capacity of the public sector to deliver the same service or project. This assessment is fundamental to ensuring that the PPP is the most advantageous option for the public administration and for society.

In addition, the project relies on two sources of funding to support it: a monthly public payment and a fee from the population. By balancing economic efficiency with social and environmental responsibility, the concession seeks not only to meet immediate demands, but also to contribute to the long-term development of the region. Thus, this initiative not only represents a milestone in infrastructure, but also highlights the capacity of public-private partnerships to promote innovative solutions for economic and social progress.

Integrated Sanitation PPP

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

The expansion and improvement of sanitation infrastructure, including sewage collection and treatment, water distribution, waste management and the implementation of a Sorting and Recycling Plant, bring various benefits to the population and the environment. These measures not only prevent disease, but also ensure hygienic and safe conditions, as well as promoting the conservation of natural resources and long-term environmental sustainability. Promoting environmental education is essential for raising awareness and making this system effective.

In addition, the practice of selective collection, sorting and recycling plays a crucial role in reducing negative environmental impact, while fostering the conservation of natural resources, the mitigation of climate change and sustainable economic development, generating jobs and reintegrating waste into the production chain, reducing dependence on finite resources and minimizing waste.

Integrated Sanitation PPP

Replicability

iv) Be replicable and scalable

The Public-Private Partnership (PPP) model for basic sanitation, integrating water, sewage and solid waste management services, is emerging as a replicable solution, especially considering the global urgency in addressing sanitation-related challenges. Given the scenario in which many cities around the world face significant gaps in sanitation infrastructure, the successful implementation of this model in one pilot city can inspire other localities to adopt similar strategies. Replicability is enhanced by the universality of the problems associated with basic sanitation, such as scarcity of resources, population growth and climate change. The possibility of adjusting the model according to the specific characteristics and needs of each municipality reinforces its applicability in diverse contexts. Thus, the replication of this model not only addresses deficiencies in sanitation services, but also strengthens global cooperation in the search for sustainable and effective solutions to one of the most pressing challenges faced by cities around the world.

This innovation introduced by the Upanema PPP has already inspired studies in other Basic Sanitation projects that encompass multiple services, such as Pirenópolis, a city located in central-western Brazil, concentrating its efforts on Water & Sewage and Urban Cleaning, demonstrating the potential for replicability of this PPP model developed by IPGC.

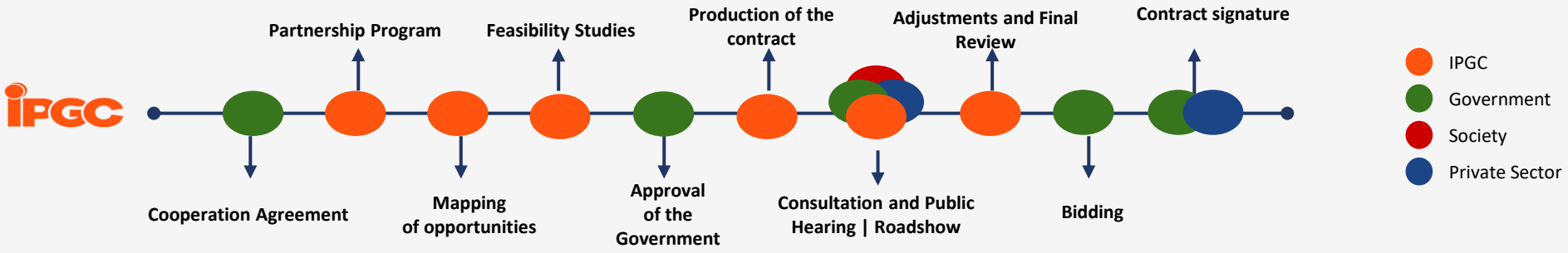
Integrated Sanitation PPP

Stakeholder Engagement

v) Engage all stakeholders

The development of an Integrated Sanitation Concession involves various stakeholders throughout the structuring process. These stakeholders are diverse in nature, ranging from the local government, responsible for establishing the cooperation agreement and requesting the organization of the concession, to the private sector, interested in the efficient operation of the service. It also includes the independent verifier in charge of monitoring and managing the contract. Finally, society plays a crucial role, contributing to the development of the project and being the ultimate beneficiary of the concession, receiving essential quality basic sanitation services.

The diagram below shows how these stakeholders are included throughout the structuring process:



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Public-Private Partnerships
for the Sustainable Development Goals

Xiaoqing River Revival PPP Project

Overview

UNECE

Xiaoqing River Revival PPP Project
Shandong Province(East), People's Republic of China

Project Proponent:	Shandong Provincial Government
Sector:	Waterway Sector
Public Organisation:	Shandong Provincial Department of Transport
Private Organisation:	China Railway Construction Investment Group Co.,Ltd. etc.
Capital Providers:	**Equity:** $0.48 billion(20% from the provincial government; 80% from the SPV) **Debt:** $0.88 billion, Agricultural Bank of China; China Construction of Bank; Industrial and Commercial Bank of China **Central government subsidies:** $0.51 billion(Port Construction Fee)
Estimated CapEx (USD)	$1.87 billion
Stage of the project	Operations and maintenance stage (Pilot from July 1st of 2023 to June 30th of 2024)

Yanzhen WENG
China Academy of Transportation Sciences

Public-Private Partnerships for the Sustainable Development Goals

Xiaoqing River Revival PPP Project

Context and Strategy

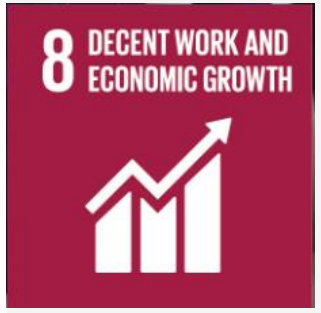
UNECE

Where:

Xiaoqing River Revival PPP Project originates in Jinan, the capital of Shandong province, and passes through the cities of Binzhou, Zibo, Dongying, and Weifang before merging into the Bohai Bay.

Why:

Provincial government does not have special funds to undertake construction costs of the project at once. Through the PPP model, local government can make use of the funding, construction, and operational advantages of private companies.



What:

Xiaoqing River was excavated from 1130 to 1137 in the Southern Song Dynasty. Due to water scarcity and a decrease in cargo volume along the river, it was then suspended in 1997. After 26 years, the waterway was open to vessel traffic since July 2023.

Who:

1)Shandong Province government: responsible for the public policy guidelines, project planning, open bidding, gap subsidies payment.
2)SPV partners awarded responsible for: construction, operation, maintenance and services provided.

When:

1)Project planning: 2010-2018
2)Government approval: 2018
3)Procurement: 2019
4)Construction: July 2020-June 2023
5)Startup of operations: July 2023(one year pilot operation)

Xiaoqing River Revival PPP Project

Access and Equity

i) Increase access to essential services and promote equity

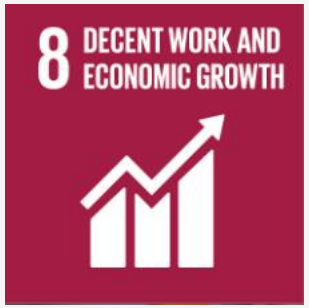
- Xiaoqing River Revival Project is a relatively large-scale investment in the waterway sector(the largest inland waterway project in the history of Shandong Province) . In the demonstration stage, the government invited representatives from administrative departments, engineering design agencies and industry associations to discuss the design schemes and carefully listened to the opinions of enterprises and residents along the river.
  - **Construction:** a Grade III waterway measuring 169.2 kilometers, the expansion and renovation of 39 bridges, the construction of four ship locks and two water control gates, as well as the refurbishment of 481 water facilities and 296 pipeline crossings.
  - **Maintenance and Operation:** 169.2 kilometers of a Grade III waterway, four ship locks, two water control gates, anchorage and navigation aids, and other supporting facilities.
- A low charge fee and the feasibility gap subsidy provided by the Shandong Government help all shipowners and transport companies to better access this public services at a low cost.
- This project is the only flood discharge channel in Jinan City, which has greatly abilities of flood control and drainage. Also, the increased water storage of the river has improved the agricultural irrigation conditions on both sides of the river.
- The project, which is able to accommodate 2,000-metric ton vessels, boosts the inland cities such as Jinan and Zibo to equally develop maritime related industries, such as production, logistics and trade.

Xiaoqing River Revival PPP Project

Economic Effectiveness and Financial Sustainability

ii) Economic effectiveness and financial sustainability

- Total CAPEX of the project: 1.87 billion USD
- Funding sources to support the project : stockholders‘ equity 0.48 billion USD(government: companies=2:8) ; central government subsidies(Port Construction Fee) during construction period 0.51 billion USD; bank loan 0.88 billion USD
- Style of PPP agreement: government feasibility gap subsidy
- Contract duration: 30years(3 years of construction + 27 years of operation and maintenance)
- Neither public guarantee nor government contingent liabilities involved
- Shareholder IRR: 4.8%



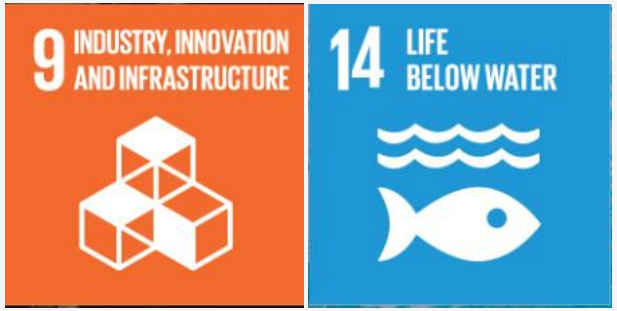
- Based on the PPP model, the Shandong provincial government chose private organizations through open bidding to ensure transparency and openness in procurement phase.
- The government has innovated the project's charging system (waterway tolls, lock fees, and other revenues such as advertising fees), effectively reducing the pressure on government expenditures.
- The project has created nearly 150,000 full-time and other types of jobs for both women and men at appropriate wages during the construction stage, and over 140 full-time jobs for a period of 27 years in the operations stage. A large number of local rural residents have also participated. Consequently, it has helped to cultivate a substantial team of professional, technical, and management human resources, and has assisted individuals in building their careers.

Xiaoqing River Revival PPP Project

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

- Compared to road and railway transport, waterway transport has obvious advantages such as large transport volume, low freight rates, low investment, small land occupation, and low energy consumption.
- Contrary to conventional means of river-sea transpor, seagoing vessels enjoy a smooth passage from the inland port to the open sea without having to undergo any vessel changes or cargo transfers at the estuary. Compared to traditional land-sea routes for oversized goods, this form of innovative river-sea direct transport significantly reduces costs, minimizes pollution, alleviates road congestion, and mitigates transportation risks.
- The river maintains the natural bottom during the expansion and digging, which is conducive to the reproduction of aquatic life. The slope adopts special planting and grass protection technology to prevent the ship from washing and brushing the soil slope and to protect the natural ecology.



Xiaoqing River Revival PPP Project

Replicability

iv) Replicability and scalability of the project

- The project is replicable and scalable.

- Xiaoqing River Revival Project has created a new financing model for transport projects and other infrastructure with strong public welfare, to meet development needs.
  - The Pinglu Canal in Guangxi is a typical project that directly links inland rivers to sea-borne trade with ASEAN countries (The Association of Southeast Asian Nations), with an investment cost of just over 10 billion USD.

- In order to strengthen and innovate the operation and management of the project, the private partner has invited professional research institutions to conduct relevant studies and has developed detailed operational and management system specifications. These include a digital and intelligent waterway management system, which helps to improve operational efficiency, reduce operating costs, and increase operating revenue.

Xiaoqing River Revival PPP Project

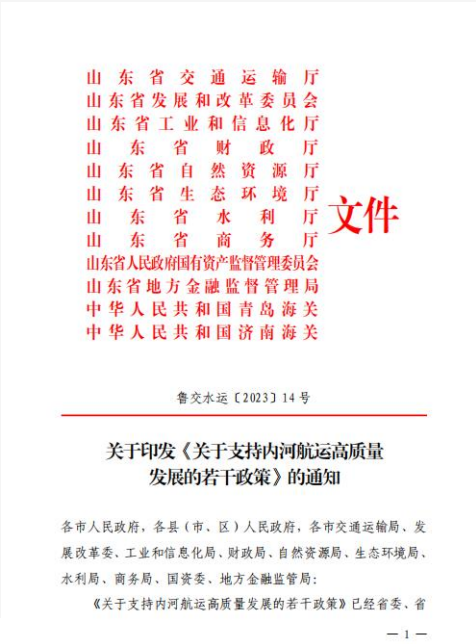
Stakeholder Engagement

v) Engagement and commitment of all stakeholders

- In the preparation phase of the project, the government took the lead and focused on conducting project planning, feasibility studies, technical solutions, PPP models and other aspects of demonstration. Several professional agencies and people were involved: associations, consulting companies, lawyers, local residents and etc.

- In the construction and operations phase of the project, except for the feasibility gap subsidy based on performance evaluation provided by the government every year, SPV is responsible for the detail construction, operation, maintenance, as well as for the project's profits and losses.

- During the project market cultivationphase, the government provides strong support. Twelve government departments, led by the Shandong Provincial Department of Transport, have issued a special support document. This document clarifies the implementation of preferential policies for channel lock fees, rewards for the construction and operation of navigation vessels, discounts for port loading and unloading, and other support policies.


山东省交通运输厅
山东省发展和改革委员会
山东省工业和信息化厅
山东省财政厅
山东省自然资源厅
山东省生态环境厅
山东省水利厅
山东省商务厅
山东省人民政府国有资产监督管理委员会
山东省地方金融监督管理局
中华人民共和国青岛海关
中华人民共和国济南海关
文件

鲁交水运〔2023〕14号

关于印发《关于支持内河航运高质量发展的若干政策》的通知

各市人民政府，各县（市、区）人民政府，各市交通运输局、发展改革委、工业和信息化局、财政局、自然资源局、生态环境局、水利局、商务局、国资委、地方金融监管局：

《关于支持内河航运高质量发展的若干政策》已经省委、省

— 1 —

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Public-Private Partnerships for the Sustainable Development Goals

Refurbishing Lithium Ion Battery and Solar Systems

Overview

UNECE

Circular Economy Solution for Li-ion Batteries and Solar Products in Ethiopia

Project Proponent:	Inter Ethiopia Solution PLC
Sector:	Renewable Energy / E-Waste Management
Public Organization:	Rural Energy Bureau's & Environmental Protection Authority (EPA)
Private Organization:	Inter Ethiopia Solutions PLC, Solar Product Importers, Distributors & Users,
Capital Providers:	Equity by Inter Ethiopia, loan from banks & grants
Estimated CapEx (USD)	$869,890.43
Stage of the project	Operations and maintenance stage

Public-Private Partnerships
for the Sustainable Development Goals

Circular Economy Solution

Context and Strategy

UNECE

Where

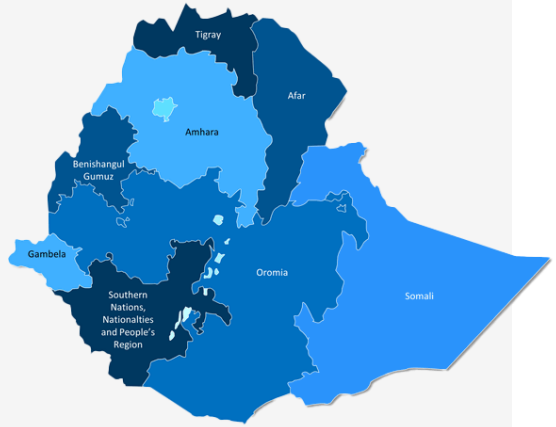
This initiative is set in Ethiopia, targeting rural off-grid communities. It focuses on harnessing solar power to empower these communities, aligning with national efforts for better energy access and sustainability. The project leverages Ethiopia's renewable energy sector to address the clean, affordable, and modern energy needs of these areas.

Why

Prompted by the urgent need for clean and affordable energy in rural, off-grid communities, this project aligns with Ethiopia's dedication to sustainable energy solutions. By adopting a Public-Private Partnership (PPP) model, it aims to combine public oversight with private sector efficiency, supported by comprehensive assistance for sector growth.

What

Aiming for significant social and environmental impacts, this project seeks to enhance access to affordable solar energy solutions, promoting productivity, connectivity, resilience, and supporting the Sustainable Development Goals (SDGs). It emphasizes circularity and e-waste initiatives, focusing on long-term sustainability and environmental justice.



Circular Economy Solution

Context and Strategy

UNECE

Who
Stakeholders include the Ethiopian Ministry of Water, Irrigation and Energy, Rural Energy Bureau, EPA, and Inter Ethiopia Solutions PLC, alongside solar product importers and distributors. Responsibilities are shared, with the public sector providing regulatory support and the private sector overseeing design, financing, construction, and operation.

When
Key milestones span project planning, government approvals, procurement, and the start of operations, aiming for long-term project viability and sustainability goals. The PPP agreement's duration ensures the project's continuous impact and return on investment.

How
Contribution to the 2030 Agenda and the SDGs:
This project contributes to the SDG 7 (Affordable and Clean Energy): SDG 11 (Sustainable Cities and Communities): SDG 13 (Climate Action): SDG 17 (Partnerships for the Goals): Social and

The PPP model represents a 'win-win' by leveraging the strengths of both public and private sectors.

Circular Economy Solution

Access and Equity

Access and Equity

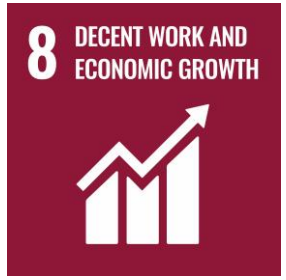
Circular Economy Integration: Implement a circular economy model for lithium-ion batteries and solar home systems, focusing on refurbishment, repurposing, and sale back to rural communities, ensuring sustainable resource use and reduction in e-waste.

Overcoming Barriers to Access: Address geographical and financial barriers to ensure that refurbished and repurposed solar products are accessible and affordable for rural communities, enhancing their energy access and contributing to environmental sustainability.

Community-Centric Solutions: Engage with rural communities to tailor the refurbishment process to their energy needs, ensuring the solutions provided are directly beneficial and suited to local contexts.

Sustainable Impact and Monitoring: Develop a scalable and self-sustaining model that measures success through increased access to affordable renewable energy, improved recycling rates, and community satisfaction, ensuring long-term environmental and social benefits.

Inclusivity and Empowerment: Prioritize equitable access for all community members, with special attention to empowering marginalized groups, ensuring that the benefits of circular economy practices in waste management and renewable energy access are widely and fairly distributed.



Circular Economy Solution

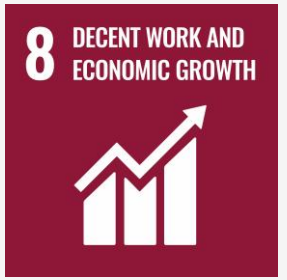
Economic Effectiveness and Financial Sustainability

Economic and Financial Sustainability

Funding Sources: The project is supported through a mix of equity investments from Inter Ethiopia Solutions PLC, loans from financial institutions, and grants from international development partners.

Financial Structuring: The financial model may include an availability payment scheme for the public sector to ensure service availability, combined with a user-pay mechanism for direct beneficiaries of the energy services. This mixed approach balances financial sustainability with affordability for end-users.

Economic and Financial Returns: The project is expected to offer high internal rates of return (IRR), with the exact figures depending on the final project scope and scale.



Enhancing the Local Economy

Economic Growth: By providing reliable access to renewable energy, the project stimulates local economic growth. Businesses and entrepreneurs in rural areas can extend their operating hours, increase productivity, and explore new ventures that were not possible without stable electricity.

Quality Employment and Skills Development: Training programs associated with the project contribute to skill development in the local workforce, focusing on renewable energy technologies, maintenance of solar systems, and e-waste management

Key Performance Indicators (KPIs)

Payback Period: The project aims for a payback period that reflects its financial viability, typically evaluated to be within a reasonable timeframe given the initial investment and operating costs.

Circular Economy Solution

Environmental Sustainability

Developing Resilient Infrastructure
Design and Construction: The project is designed to be resilient against environmental and climatic challenges typical for Ethiopia, incorporating materials and technologies suited to the local context.
Lifecycle Approach: A lifecycle approach to infrastructure development ensures that from the initial design to the end-of-life, the project remains viable, maintainable, and adaptable to future technological advancements or changes in community needs.

Environmental Impact and Sustainability
CO2 Emission Reduction: A key measure of the project's environmental impact is its ability to cut CO2 emissions by replacing fossil fuel-based energy sources with clean solar power.
Monitoring and Control: Environmental impacts during both development and operational phases will be rigorously monitored using established environmental management systems.

Contribution to the Circular Economy
Utilizing Unwanted Waste: The project contributes to the circular economy by repurposing and refurbishing lithium-ion batteries and solar products, thus extending their life and reducing the need for raw materials.
Operational Waste Management Plan: An operational waste management plan will be implemented to minimize waste generation across the project's lifecycle. **Benchmarking Waste Reduction:** The project's waste reduction efforts will be benchmarked against national industry norms to quantify its effectiveness in minimizing environmental impacts

Circular Economy Solution

Replicability

UNECE

Replicability

Model Adaptability: The project's model, focusing on refurbishing and repurposing lithium-ion batteries and solar products, can be adapted to different geographic and economic contexts, both within Ethiopia and in other countries.

Cross-Sector Influence: The project's principles and practices can positively affect other sectors by demonstrating the viability of circular economy models. Sectors such as electronics, automotive (especially in the context of electric vehicles), and consumer goods can benefit from insights into sustainable product lifecycle management.

Scalability

Growth Potential: The project includes provisions for growth, such as adding more refurbishing facilities or expanding the range of products handled. Scalability depends on market demand, availability of additional funding, and continued governmental support.

Additional Phases: Future phases could be planned to introduce new technologies or expand into new regions, contingent on the successful demonstration of the model's effectiveness and sustainability in its initial phase.

Human Capital Management

Training and Development: The project emphasizes building human capital through comprehensive training programs for the project implementation and operations teams.

Public and Private Roles: Both public and private partners play crucial roles in human capital management.

Circular Economy Solution

Stakeholder Engagement

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Involvement of Stakeholders

Project Preparation: During this phase, stakeholders were involved through consultations and participatory planning sessions.

Project Development: As the project moved into the development phase, stakeholder involvement deepened, with advisory panels comprising representatives from various sectors, including labor unions and environmental groups.

Operations Phase: In the operational phase, stakeholders participated in oversight committees and feedback mechanisms to ensure the project's outcomes aligned with community expectations and sustainability goals.

Challenges and Management Strategies

Main Challenges: One of the main challenges observed was aligning the diverse interests and expectations of various stakeholder groups.

Management Strategies: To manage these challenges, the project adopted a multi-tiered governance model that allowed for clear roles and responsibilities.

Governance Model

The governance model for stakeholder involvement was structured to ensure inclusivity and effective participation across all phases:

Steering Committee: Served as the highest decision-making body, with broad representation from public and private sectors, civil society, academia, and other key groups.

17 PARTNERSHIPS FOR THE GOALS

MInT

Ministry of Innovation and Technology

GET.invest
Mobilising Renewable Energy Investments

የአካባቢ ጥበቃ ባለስልጣን
Environmental Protection Authority

8th International UNECE PPP Forum

Compendium of case studies

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01. Argentina	Córdoba Cluster Program
02. Brazil	Smart Goiania PPP
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18. Ukraine	New Multidisciplinary Hospital in Zhytomyr
19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

UNECE

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

GREECE

Project Proponent:	Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania
Sector:	Social infrastructure/education
Public Organisation:	Municipality of Chania
Private Organisation:	Pre-selected candidates in the first phase of the competition: Aktor Concessions (ELEKTOR INTRAKAT), AVAX (AVAX), ATESE, Mytilineos
Capital Providers:	No public source. Equity and commercial banks.
Estimated CapEx (USD)	Approx. 25,7 million in $USD (23, 6 million in €) – plus VAT [exchange rate 17/01/2024]
Stage of the project	Under Procurement - Competitive Dialogue [Please note that a number of assessments and reports are currently being developed or are updated as the project evolves]

Mr.Nikos Sergis

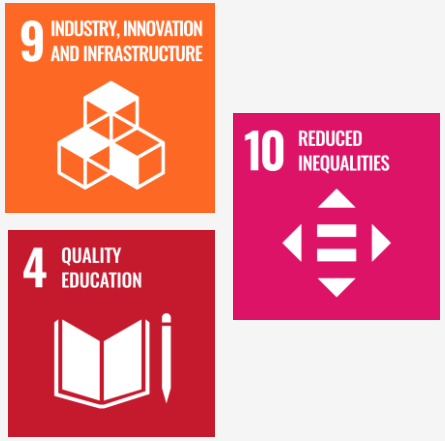
Dr. Apostolos Papadopoulos

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

Context and Strategy

Where

The project is located in various areas in Crete, all in the Municipality of Chania.



Why

Schools:

- Increasing population in the Municipality of Chania (the most significant increase on the island of Crete)
- Decrease in the old-age rate
- Inadequate buildings and educational facilities
- Excessive student population in each classroom
- No new school buildings during the past decades in Crete
- Unsuitable locations for existing school units that create difficulties in access

Park:

- Non-functional existing facilities
- No easy accessibility
- No athletic infrastructure

What

This project aims to reduce inequalities and provide quality education by creating A-level student facilities in a wider area for all Greek and European standards for environmental protection and social cohesion.

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

Context and Strategy

Who

Key players are the Municipality of Chania (Crete), Student Community, Private Investors, Construction companies, Commercial Banks, Local entrepreneurs, and Local Workforce.

When

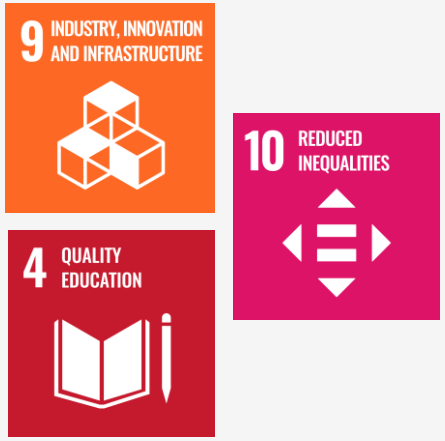
Under Procurement - Competitive Dialogue
Estimated Financial Close Date: June 2025
Project Duration: 27 years | Construction Period: 2 years | Operational Period: 25 years

How

Under certain circumstances, this project could be considered a good case to be established as a “PPP for the SDGs” type by urging all stakeholders to aim at economic, environmental, and social equilibrium, thus delivering “value for people” even though it was not initially designed as such. We consider this project to have objectives close to the core of the Sustainable Development Goals framework, such as transformational capacity, inclusivity, fostering resilience, and social and environmental orientation instead of only economic.

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

i) Increase access to essential services and promote equity



Investing in school infrastructure projects is a powerful means to advance equity in education. By providing equal access, ensuring quality learning environments, and fostering inclusive educational practices, schools become catalysts for social justice and equal opportunities for all students.

- Schools are essential in ensuring access to education for all community members, regardless of socio-economic background, ethnicity, or geographic location.
- Well-planned school infrastructure projects, such as this, can help bridge educational gaps by ensuring that schools are evenly distributed and accessible to students from diverse communities.
- Adequate school infrastructure ensures all students access safe, well-equipped classrooms, libraries, laboratories, and recreational areas.
- Disparities in learning environments, such as poorly maintained facilities or insufficient resources, can perpetuate educational inequalities.
- Inclusive education aims to accommodate students with diverse learning needs, including those with disabilities. All new schools will be built in ways that give better access to students who have more difficulties with other types of facilities that were built decades ago.
- School infrastructure projects can focus on creating accessible buildings, specialized facilities, and inclusive learning environments to support all students.

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

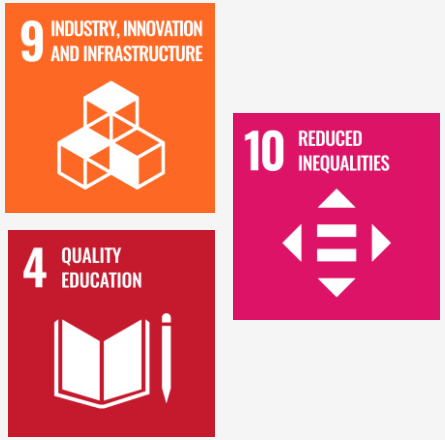
Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

According to the PPP structure, as a non-compensatory PPP, the Private Sector Partner of the Partnership will not be paid via revenues generated from the project but via availability payments by the Public Partner during operations.

No public source is going to be used for this project. Private investors will rely on equity and commercial loans.

The expected IRR is 10 -11% [to secure project attractiveness].



Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

iii) Develop a resilient infrastructure and improve environmental sustainability

By design, this project aims to achieve both economic benefits as well as social and environmental goals.

Regarding the eight schools, all new buildings follow Greek environmental laws for energy performance and have been developed by the relevant European standards to achieve the building's resilience and energy efficiency. The Energy Performance of Buildings Regulation sets out the minimum requirements for the energy performance of buildings and building elements. These requirements have been set to achieve a cost-optimal balance between the related investments and the energy costs saved over the whole life cycle of each building.

After its reconstruction, the "Peace and Friendship" park will have unique features that can monitor and document its microclimate. Moreover, the new facilities will be specially equipped to inform citizens and educate them about evolution and changes regarding certain indexes.

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

iv) Be replicable and scalable

This project is part of the national strategy for ameliorating education facilities. So, its design is based on similar previous projects completed in Attica and the periphery. Given this fact, this project can be considered replicable for Greece and other countries with similar educational needs.

This project can be pivotal in promoting local economic development and improving the community's overall well-being. Under certain modifications, it applies to other social infrastructure projects and could transfer knowledge to other sectors.

A sound PPP Unit is committed to effectively cooperating with the Awarding Authority and closely assisting in managing the project by creating well-trained working teams dedicated to designing, monitoring, and reviewing all phases of PPP project implementation.

Eight school buildings and reconstruction of the "Peace and Friendship" park in the Municipality of Chania

v) Engage all stakeholders

Stakeholders involved in this project are the Municipality of Chania (Crete), the Student Community, Private Investors, Construction companies, Commercial Banks, Local entrepreneurs, the Local workforce, and the Ministry of Education.

The institutional involvement of the Ministry of Education, though, during the design period, along with the schools' licensing, ensures that the project follows the national strategy and standards for education. These standards are established and constantly updated through an open communication channel involving all relevant educational actors.

Respectively, the Municipality of Chania has similar channels of communication with citizens to put forward their views and complaints.

8th International UNECE PPP Forum

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University of Western Macedonia Student Accommodation PPP

Overview

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University of Western Macedonia Student Accommodation PPP
GREECE

Project Proponent:	University of Western Macedonia Student Accommodation PPP
Sector:	Social infrastructure/education
Public Organisation:	University of West Macedonia
Private Organisation:	At this point (February 2024), there are the following companies that have expressed interest in participating in the competitive tendering procedure: 1) Avax, 2) GEK Terna, 3) Intrakat – Aktor Concessions, 4) TEKAL, 5) Mytilineos.
Capital Providers:	No public source. Equity and commercial banks. EIB has expressed primary interest to fund part of the project.
Estimated CapEx (USD)	Approx. 70,7 million in $USD (65 million in €) – plus VAT [exchange rate 16/01/2024]
Stage of the project	Stage of Expression of Interest [Please note that several assessments and reports are currently being developed or are updated as the project evolves]

Mr.Nikos Sergis

Dr. Apostolos Papadopoulos

University of Western Macedonia Student Accommodation PPP

Context and Strategy

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Where

The project is located in various places in the Western Macedonia area: Kozani, Florina, Kastoria, and Ptolemaida (within the University campus at each location).

Why

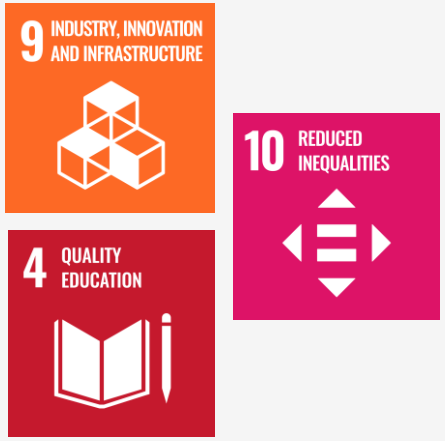
Universities are under increasing pressure to provide high-quality and affordable education to students while conducting research of high standards. In recent years, public funding has declined significantly due to economic stagnation, raising concerns about the viability of many institutions in ever-increasing domestic and international competition.

Investment in social infrastructure, such as education and health, is a prerequisite for effective sustainable development and, therefore, key to advancing the Sustainable Development Goals.

The necessity to implement the project stems from the relatively limited capacity of the existing building facilities to meet the University's needs for accommodation, catering, and educational facilities for applicants and beneficiary students in combination with its aim for national and international recognition in the academic and research field by becoming a pole of attraction for students and qualified staff.

What

UoWM, via this project of strategic importance, aims to address current accommodation needs and provide modern, energy-efficient building facilities, bring together the University's activities, and positively impact the educational and research experience of the West Macedonia Region.



University of Western Macedonia Student Accommodation PPP

Context and Strategy

UNECE

Who

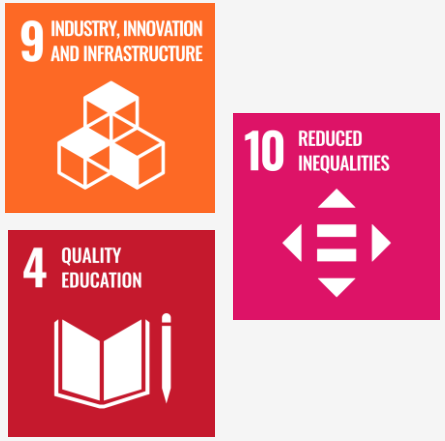
Key players are the University of Western Macedonia, the Student Community, Private Investors, Construction companies, Financial Institutions, Local entrepreneurs, and the Local workforce | [in all major cities where the student houses are going to be built]

When

Stage of Expression of Interest
Estimated Financial Close Date: December 2025
Project Duration: 30 years | Construction Period: 3 years | Operational Period: 27 years

How

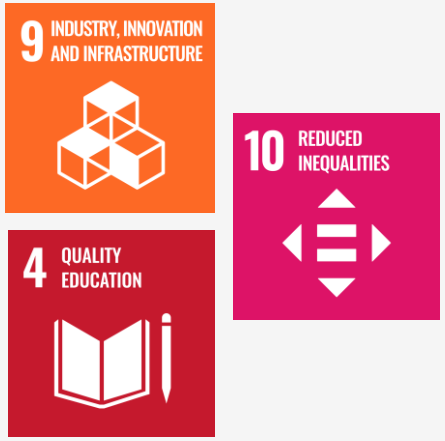
Under certain circumstances, this project could be considered a good case to be established as a “PPP for the SDGs” type by urging all stakeholders to aim at economic, environmental, and social equilibrium, thus delivering “value for people” even though it was not initially designed as such. We consider this project to have objectives close to the core of the Sustainable Development Goals framework, such as transformational capacity, inclusivity, fostering resilience, and social and environmental orientation instead of only economic.



University of Western Macedonia Student Accommodation PPP

Access and Equity

i) Increase access to essential services and promote equity



The lack of affordable housing is a growing problem in the EU, with prices and rents rising steadily over time, relative to incomes. The situation has worsened particularly for low-income and private tenants, but also for middle-income citizens burdened with housing and maintenance costs. University students and their families are in Greece among precarious social groups.

The Project envisages the construction of student residences and supporting facilities in four sites: Kozani, Florina, Kastoria, and Ptolemaida, with total capacity beds 350, 150, 150, and 100, respectively, stressing this point that in some areas, there was zero capacity for student residencies. Social infrastructure is essential for students to be adequate and in good condition, to give students the chance to have their basic need of housing covered so they can concentrate on their studies and personal development.

Given the lack of available student residencies and the ongoing pressure that the University and the local areas face, this project is crucial for social cohesion and development boost of certain areas. It accelerates infrastructure development, improving access to services for all citizens, including those in underserved areas, with a special focus on university students. It ensures social inclusion and social justice and addresses the needs of marginalized or vulnerable populations, such as students who otherwise would not be able to study away from their hometown.

ii) Demonstrate the economic effectiveness and financial sustainability of the project

According to the PPP structure, as a non-compensatory PPP, the Private Sector Partner of the Partnership will not be paid via revenues generated from the project but via availability payments by the Public Partner during operations.

No public source is going to be used for this project. Private investors will rely on equity and commercial loans. IFIs have expressed interest in financing.

The expected IRR is 11% [to secure project attractiveness].

EBRD is currently maturing this project, so several assessments and reports are currently being developed/ updated. Cost-benefit and Value for Money Analysis will be completed by the end of 1st semester of 2024.

iii) Develop a resilient infrastructure and improve environmental sustainability

By design, this project aims to achieve both economic benefits as well as social and environmental goals. Even from the very early stages, there was provision for preliminary assessment of potential E&S impacts.

The UoWM sets out to become the first Greek zero-emission university, laying the foundation for the transition period of the West Macedonia Region. Thus, given the strategic objective of the whole area, environmental sustainability is a key component of this project.

Moreover, in all areas where campuses are going to be developed, there is provision and planning for energy-efficient buildings and green areas in the surroundings.

An essential aspect of this project is that there are interlinkages between the Sustainable Development Goals and that this project of green infrastructure contributes to a broader green plan of the area and a “green development ecosystem”.

iv) Be replicable and scalable

This project is part of the national strategy for ameliorating student accommodation facilities. So, its design is based on similar previous projects completed in the periphery. Given this fact, this project can be considered as replicable itself, not only for Greece but also for other countries with similar student housing needs.

This project can be pivotal in promoting local economic development and improving the community's overall well-being. Under certain modifications, this project applies to other social infrastructure projects, and it could transfer knowledge to other sectors.

There is a sound PPP Unit that is committed to effectively cooperating with the Awarding Authority and closely assisting in managing the project by creating well-trained working teams dedicated to designing, monitoring, and reviewing all phases of PPP project implementation.

v) Engage all stakeholders

Stakeholders involved in this project are the University of Western Macedonia, Student Community, Private Investors, Construction companies, Financial Institutions, Local entrepreneurs, Local workforce | [in all major cities where the student houses are going to be built]

A stakeholder engagement plan will be completed for this project, which aims to:

- Contributing to understanding the stakeholder engagement requirements.
- Defining a technically and culturally appropriate approach to stakeholder engagement is essential for successfully managing a Project's environmental and social risks and impacts.

Public-Private Partnerships for the Sustainable Development Goals

8th International UNECE PPP Forum

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19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

Creation of Renewable Energy Powered Data Centre

Overview

UNECE

Creation of Renewable Energy Powered Data Centre
Kyrgyz Republic

Project Proponent:	PPP Center of the Kyrgyz Republic
Sector:	Energy, Digitalization, IT
Public Organisation:	Ministry of Digital Development of the Kyrgyz Republic, PPP Center of the Kyrgyz Republic
Private Organisation:	Undefined
Capital Providers:	Private investments
Estimated CapEx (USD)	20.85 million to 26.01 million
Stage of the project	Identification

Creation of Renewable Energy Powered Data Centre

Context and Strategy

UNECE

Where - The following areas are identified as candidate regions for the development of the project:

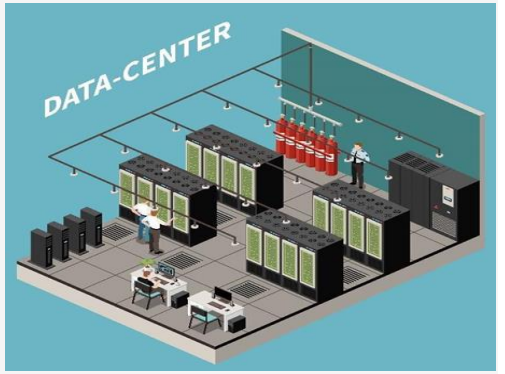
1. Alamudun District, Chuy Region, approximately 24 km South of Bishkek;
2. Kemin District, Chuy Region, approximately 90 East of Bishkek;

The key economic sectors of the region are: information technology, energy, infrastructure, ecology and environment.

Why - The use of PPPs provides a number of advantages both for the state and for business development. In the proposed Build Own Operate and Transfer (BOOT) structure for the data center project, a transparent public-private partnership is outlined. Through a carefully designed tendering process, private entities will competitively bid for participation, with the selected party engaging in negotiations and contractual agreements. The government department facilitates this collaboration by allocating land, leased to the private entity for the project's duration. The private party takes on responsibilities for fixed costs, timely project delivery, and ongoing operations, with asset transfer to the government concluding the concession period.

What - The Project will be among the few industrial scale projects to be powered by captive renewable power. This in itself will help create awareness of the value that renewable energy can add to existing businesses. Further, being located in a rural/suburban area, the project or its public partner may invest in vocational educational facilities for the skills development of the local population. The net reduction in GHG as compared to a conventionally powered data center is estimated at 3,000 Metric Tonnes of CO2, with the key contributor to this reduction being the approximately 13 GWh of renewable energy to be produced by the on-site wind power plant.

Based on experience from similar projects in the rural and/or suburban regions, the project is expected to create up to 200 jobs during the construction phase and over 60 jobs in the commercial operations phase.



Creation of Renewable Energy Powered Data Centre

Context and Strategy

UNECE

Who - The private partner, will interact with the Government of the Kyrgyz Republic and the PPP Center of the Kyrgyz Republic, as well as with the local authorities of Chui region and tenants.

When - The key stages have not been defined yet. The Detailed Engineering process is currently underway. Following project kickoff, detailed designing and feasibility studies will be performed for site architecture, civil, electrical, mechanic and environment.

How - The project to establish a Data Center on renewable energy sources in the Kyrgyz Republic serves as an exemplary Public-Private Partnership (PPP) for achieving Sustainable Development Goals (SDGs). This project contributes to the implementation of the Agenda until 2030 and SDGs in several aspects.
Firstly, the utilization of renewable energy sources in the Data Processing Center helps reduce greenhouse gas emissions and minimize environmental impact, aligning with the goals of environmental sustainability outlined in the Agenda until 2030.
Secondly, the project stimulates the development of information technologies and the digital economy in the country, fostering digital transformation and sustainable economic growth.
The social aspects of the project include the creation of new job opportunities and enhancing the accessibility of public services and infrastructure for the population.
The combination of the public and private sectors is a justified decision, as government involvement provides infrastructure support and access to funding, while the private sector brings innovation and efficient project management. This partnership maximizes resource utilization and contributes to the successful implementation of the project.

i) Increase access to essential services and promote equity

Renewable energy-powered data centers can play a crucial role in increasing access to essential services and promoting equity.

- By using renewable energy sources such as solar, wind, or hydroelectric power, data centers can significantly reduce their operational costs. This can translate into lower prices for the services they provide, making them more accessible to a wider range of people, including those in underserved communities.
- Renewable energy sources are often more reliable than traditional fossil fuel-based energy sources. This can lead to greater uptime for data centers, ensuring that essential services such as healthcare, education, and communication remain accessible even during power outages or natural disasters.
- Access to essential services often depends on access to digital technologies. By providing reliable and affordable data services powered by renewable energy, data centers can contribute to digital inclusion efforts, ensuring that everyone has access to the information and resources they need to thrive.
- In summary, renewable energy-powered data centers have the potential to increase access to essential services and promote equity by reducing costs, improving reliability, fostering environmental sustainability, investing in communities, facilitating digital inclusion, providing educational opportunities, and advocating for supportive policies.

ii) Demonstrate the economic effectiveness and financial sustainability of the project

The project cost can be estimated to range from $20.85 million to $26.01 million USD. For OPEX (operating costs), depending on the total capacity of the project, taking into account economies of scale and scope sharing, the annual O&M estimate can range from 17% to 23% of CAPEX (capital expenditure). The project's capital structure will be determined in collaboration with government departments and stakeholders. Grants and funding might be sought from international donor agencies, considering the project's pioneering nature and significant socio-economic impact in Kyrgyzstan. The capital will include debt, equity, and potentially non-dilutive funding in the form of grants. Green investment initiatives will offer favorable terms for renewable energy investments, and it's anticipated that this project can access a wide range of sources of funding.

Revenue Streams: This project boasts two revenue streams: rack rentals and energy sales. At full occupancy, the split between energy and rack rentals is expected to be equal, i.e. 50:50.Rack rentals will be set at globally competitive rates, while the energy will be cost-effective, primarily sourced from renewable sources. Moreover, the project's carrier neutrality and green energy utilization will help aligning the project with global data centre tenant requirements. The project is strategically positioned to cater to local enterprises, IT firms, banks, and government departments. Its appeal and attractiveness will extend to international cloud computing platforms in the region. By focusing on renewable-powered IT infrastructure, it addresses the escalating demand for digital business transformation, both locally and on a global scale. Following characterization of the wind resource and energy yield estimation, the Levelized Cost of Energy (LCOE) will be calculated taking into account the wind energy component, cost of balancing power from grid and any other ancillary costs. The rack rentals will be estimated following clarity on the public sector component of the revenue.

iii) Develop a resilient infrastructure and improve environmental sustainability

- The integration of renewable energy helps mitigate the environmental impact of data center operations by reducing greenhouse gas emissions. By transitioning away from fossil fuels, data centers contribute to climate resilience efforts, which are crucial for mitigating the risks associated with climate change, such as extreme weather events and sea-level rise.

- The net reduction in GHG as compared to a conventionally powered data center is estimated at 3,000 Metric Tons of CO_2, with the key contributor to this reduction being the approximately 13 GWh of renewable energy to be produced by the on-site wind power plant.

- The Project will be compliant relevant Kyrgyz national and/or provincial environmental guidelines including any National Environment Quality Standards (NEQS), as per prevailing country regulation. For this, a detailed Initial Environment Examination will be performed for the Project, the findings of which will be present to relevant regulator for the environment, for their review and issuance of the applicable permit. As per industry practices, such permits (or their waiver as applicable) are a pre-requisite for all financing institutions.

- An Initial Environment Examination (IEE) will identify any risks that the project poses to the environment, and also propose the mitigations. The risks and mitigations are divided in the construction and commercial operation phases. For both the phases, Independent Monitoring Consultant (IMC) will be appointed for reporting on the environmental compliances of the regulator as well as the project lenders.

- As the project is planned on public owned land that is free from any encumbrances or settlements, there is little likelihood of any re-settlement. Further, the land is located in an area where there is very little flora and fauna.

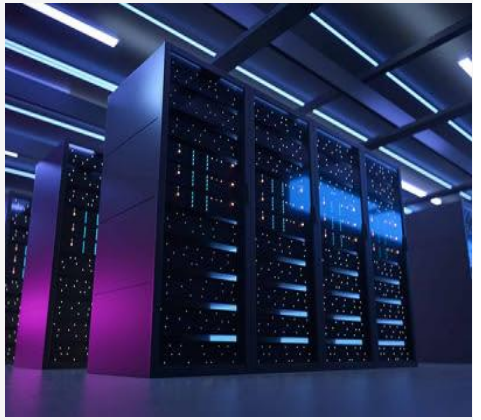
iv) Be replicable and scalable

- The project's success can be replicated in other countries by sharing best practices, lessons learned, and technical specifications with stakeholders, including government agencies, investors, and technology providers. Establishing partnerships with local renewable energy developers, construction firms, and data center operators can facilitate the replication process by leveraging their expertise and resources. Adaptation to local regulations, climate conditions, and market dynamics will be necessary to ensure the project's viability and sustainability in different countries.

- Within the same country, replication can occur by identifying regions with similar environmental conditions suitable for renewable energy deployment and data center infrastructure development. Collaboration with regional or local authorities, utilities, and community organizations can facilitate the replication process by addressing regulatory hurdles, securing land permits, and gaining community support.

- The project can positively impact the energy sector by creating demand for renewable energy infrastructure development, driving investment in clean energy generation and grid modernization. The project's adoption of advanced technologies, such as cloud computing, artificial intelligence, and Internet of Things (IoT), can catalyze innovation and growth in the technology sector. Knowledge and expertise gained from the project can be transferred to other sectors, fostering digital transformation and enhancing competitiveness in the global market.

- Additional phases of development can be planned to accommodate growing demand for data processing and storage capacity. This expansion can include the construction of new data halls, installation of additional renewable energy infrastructure, and upgrades to existing facilities.



v) Engage all stakeholders

Stakeholders Involved:

- Government Ministries and Agencies
- Financial Institutions
- Data Center Operators
- Renewable Energy Developers
- Civil Society Organizations
- Academia
- Local Communities

Government Agencies: Set regulatory frameworks, provide incentives, and facilitate permits.
Financial Institutions: Provide funding and financial expertise for project feasibility studies.
Data Center Operators: Assess market demand and technical feasibility.
Renewable Energy Developers: Identify suitable renewable energy sources and assess energy infrastructure.
Civil Society Organizations: Advocate for environmental and social considerations.
Academia: Conduct research and provide expertise on technical and environmental aspects.
Local Communities: Provide input on potential impacts and benefits.

8th International UNECE PPP Forum

Compendium of case studies

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Public-Private Partnerships for the Sustainable Development Goals

Qatar Schools PPP Program – Package 1

Overview

UNECE

The Qatar Public Private Partnership Schools Development Program – Package 1

Qatar

Project Proponent:	Rameshbabu Settypalli, Mott MacDonald
Sector:	Social Infrastructure - Education
Public Organisation:	Ministry of Education and Higher Education (Authority) Public Works Authority (Authority's Representatives) Mott MacDonald (Contract Management Unit)
Private Organisation:	Dar Al Eloum for Real Estate Development LLC (Project Company); Al Jaber Trading & Contracting Co. WLL (Building Contractor); Al Waseef Asset Management Company WLL (FM Contractor)
Capital Providers:	Masraf Al Rayan, Qatar
Estimated CapEx (USD)	USD 290 Million
Stage of the project	Commercial Operations stage commenced from Aug 2022

Public-Private Partnerships for the Sustainable Development Goals

Qatar Schools PPP Program – Package 1

Context and Strategy

UNECE

Where

Project is located at eight (8) locations in the city of Doha, Qatar, covering 230,000 sq. mt with a total population of more that 2 million. The eight schools cumulatively cater a total personnel of 7,152 (6,288 students & 864 staffs). The key economic sectors are education, infrastructure, technology and finance

Why

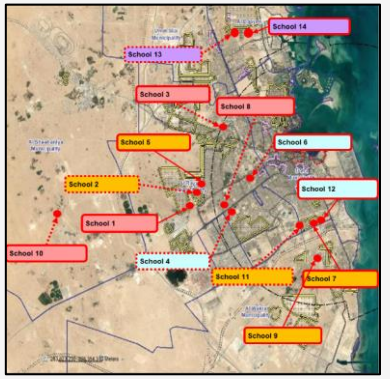
Qatar's Ministry of Education and Higher Education has conducted a needs assessment analysis to its existing educational facilities and has identified four key challenges namely

- **Overcrowding** (class size exceeding standard capacity),
- **Inadequate Infrastructure** (facilities not suitable for current curriculum),
- **Increased Demand** (due to strong population growth) and
- **Old Infrastructure** (schools reaching 40 years old resulting in limited capacity for improvement).

The Qatar National Vision 2030 highlights the significance of developing and enabling private sector to play key role in achieving long-term goals and outcomes for the country. To this end, the Qatar Schools PPP Project has been identified to involve the private section in developing the education sector and promoting human development in line with overarching objective of achieving wider economic growth.

What

By leveraging private sector resources and efficiencies, this project aims to deliver state of the art education facilities to cater Qatar's growing population and increasing demand for holistic and quality education. The project shall emphasize sustainable approach throughout its lifecycle and achieved GSAS certification for Construction Management, Design & Build Stage and Operations Stage.



Qatar Schools PPP Program – Package 1

Context and Strategy

UNECE

Who

The Key Players are the Qatar's Ministry of Education and Higher Education (MoEHE) as the Authority and the Public Works Authority (Ashghal) as the Authority Representative. Ashghal is responsible to manage all PPP transactions from concept stage, business case, procurement and implementation stage. Dar Al Eloum (DAE) as the private partner is obligated to carry out design, construction, completion, commissioning, operation & maintenance and handover of all Schools facilities in accordance with the PPP Agreement requirements.

When

Commercial Close was achieved on 1st September 2023.
Services Period starts on 14 August 2022 for six (6) of the Schools and
on 6 October 2022 for the other two (2) Schools.
The expiry date is twenty-five (25) years after the final start of the Services Period.

How

This project corresponds directly with SDG 4: Quality Education to ensure inclusive, equitable and sustainable society where every students can have access to quality education and opportunity to fulfill their potential. Each Schools are integrated with Special Needs Block and equipped with dedicated music, dance and art activity rooms for the children's holistic development. The Public Private partnership is a win-win solution for all parties considering that the MoEHE can focus on its core responsibility in delivering quality education without being burdened by the costs maintaining buildings. In return, the private sector can secure long term contract with good return on investment.

Qatar Schools PPP Program – Package 1

Access and Equity

UNECE

i) Increase access to essential services and promote equity

In response to Qatar's significant population growth and subsequent **increase in demand for educational services** (driven in part by the low nominal fee and quality of education), the government has recognized the **urgent need to enhance access to quality schooling** while prioritizing **equity and inclusivity**. The surge in student density has necessitated the establishment of 8 to 12 new schools annually to accommodate the growing demand. However, existing educational infrastructure is insufficient to absorb this expansion due to outdated facilities and inadequate space.

To address these challenges and promote equity, this project aimed at creating inclusive learning environments accessible to all members of the population. These new schools are designed with careful **consideration for students with special educational needs**, incorporating features such as specific colour schemes, textured walls, and accessible floors, stairs, and doors to **assist individuals with visual impairments in navigating the facilities effectively**. Additionally, surfaces throughout the schools are constructed to be smooth and easily cleanable, minimizing the accumulation of dust and pathogens to safeguard the health of all students, particularly those vulnerable to infections.

Furthermore, this project aligns with SDG5 (Gender Equity) by ensuring that educational opportunities are equally accessible to all genders. Dedicated schools are built for both boys and girls, with no disparity in the quality of facilities provided. By fostering an environment that prioritizes inclusivity and equity, Qatar is not only meeting the immediate educational needs of its growing population but also laying the foundation for a more equitable and sustainable future for all its citizens.

Qatar Schools PPP Program – Package 1

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

This project employs PPP Design, Build, Finance, Operate, Maintain and Transfer method in which the capital expenditure is borne by the private sector. Government's payments start upon the beginning of the Services Period and is based on an agreed Baseline Monthly Service Payment and adjusted for Availability and Performance Deductions plus adjustment to exchange and interest rates.

Funding for the project is via combination of debt and equity. The government does not issue or liable for any direct guarantees or contingent liabilities. The expected IRR for the private sector after tax is 6-7%. It is expected that this project will present significant value for money to the government over its 25 years project period since most of the risk associated with the construction and operational stage is transferred to the private sector. The government is also able to control its expenditure more linearly since its costs are fixed and spread over the tenure of the PPP contract.

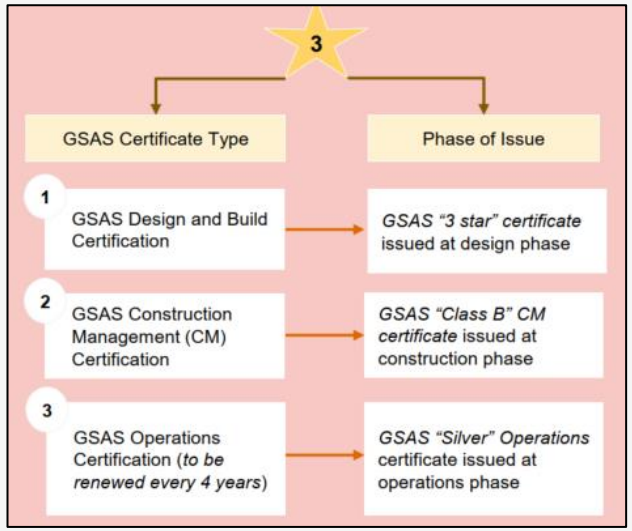
The project enhances the local economy by generating multiplier effect to the local supply chain by its sheer scale and resources required. It also facilitates innovation and technology transfer by employing the latest method of construction and asset management technology. It also creates both direct and indirect quality job to the country population across various sectors including engineering, construction, logistics and services

Qatar Schools PPP Program – Package 1

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

- Resilient infrastructure is embedded in this project as part of its requirement to comply with the Global Sustainability Assessment System (GSAS) certification throughout its entire lifecycle including Construction Management, Design & Build and Operation stages.
- Comprehensive risk review was undertaken during the design process to ensure that the facilities is built to be flood-proof and earthquake resistant.
- The schools are also constantly audited by various independent parties and covering multiple discipline to ensure its integrity and readiness to respond in the event of untoward incidences.
- The schools are built to be environmentally friendly by employing both passive and active design strategies. High performance glass is used to reduce solar radiation and skylight was installed at multiple location to minimize lighting requirement.
- The building is also equipped with energy efficient HVAC and lighting fixture and constantly monitored and optimized by BEMS. To offset CO2 emission, at least 5% of the site is planted with native vegetation.
- In pursuit of circular economy, the project consumes 15% of its material sourced from recycled material ranging among other its steel reinforcement, gypsum and timber doors.
- Some of the location use Treated Sewage Effluent (TSE) water network for landscape irrigation purpose to reduce water demand.
- In addition, each school were provided with recycle bin at strategic locations to promote recycling culture and reduce waste,



Qatar Schools PPP Program – Package 1

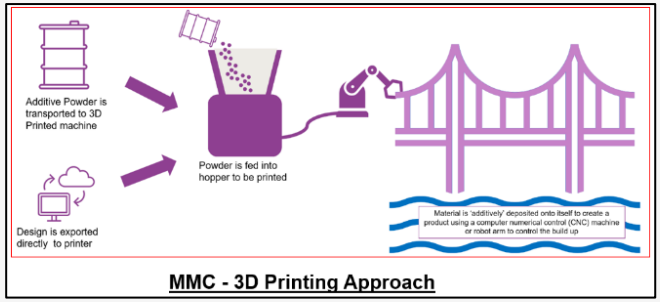
Replicability

iv) Be replicable and scalable

This project is fully replicable and scalable for the wider benefits of the economy. The Schools program was planned to be launched in four (4) packages comprising total of 47 schools. The government legally owns all intellectual property rights and therefore can transfer and replicate any aspects to future packages.

In practice, the government has recorded all the lessons learned during the first package and use it to significantly improve the delivery of the second package. For example, more details and control measure were added to promote sustainability and circular economy i.e. GSAS, recycle material requirements etc. Better technology was also introduced including Modern Method of Construction techniques to improve quality and the speed of construction.

To ensure efficient use of human capital, the government established a special team dedicated to the management of all PPP contracts. The private partner is also able to retain talent due to stability and long tenure of the project. As part of its Service Delivery Proposal, the private partner has prepared structured training program for all stakeholders to ensure that service is delivered at the required Performance Standards.



MMC - 3D Printing Approach

Qatar Schools PPP Program – Package 1

Stakeholder Engagement

v) Engage all stakeholders

- This project requires the Project Company to identify and plan the appropriate engagement strategy to all stakeholders involved. Subsequently, a one-stop, 24/7 helpdesk center is provided to receive, record and forward any issues or complaints received and track the Project Company performance against the required response and rectification time.

- The Project Company is also required to periodically issue customer satisfaction survey to the project's stakeholders to gather and measure their feedback and identify the appropriate areas for improvement.

- Additionally, the wider communities in Qatar were also able to benefit from our project due to its modern facilities. In addition to the school going children, the school was also used as a learning hub for adults to pursue advance certificate and additional skills. The facilities were also used for community events, meetings and public examination as and when required by MoEHE.

- The schools are also critical in the advancement of sports to the communities. Its sports facilities are being used by local sports club for grassroot development and professionals alike. The schools also promote equality since its facilities are separated and dedicated for each gender.

- The government is open to explore relationship and cooperation with other internal and external stakeholders. Admittedly, these engagement might put extra strain to the facilities and its FM provider but any adverse impact can be mitigated by having better supervision, control and quality-built material.

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PPP project for disinfection, disinsection and pest control in the City of Pančevo

Overview

UNECE

PPP project for entrusting the communal service of animal hygiene - disinfection, disinsection and pest control in the City of Pančevo (DDP)

Serbia

Project Proponent:	Jelena Tadić
Sector:	Animal hygiene
Public Organisation:	City of Pančevo
Private Organisation:	EkoSan Plus doo Beograd
Capital Providers:	Equity financing (EkoSan Plus)
Estimated CapEx (USD)	846,677.8 $
Stage of the project	Implementation stage

Public-Private Partnerships for the Sustainable Development Goals

PPP project for disinfection, disinsection and pest control in the City of Pančevo

Context and Strategy

UNECE

Where

The project is located in the City of Pančevo, Serbia, area is 148,8 km² , population of 84,729 citizens

Why

Previous condition: For the performance of these services, the City of Pančevo regularly hired a service provider who carried out DPP measures. Since the public procurement contracts that City of Pančevo concluded with service providers were short-term, the City submitted a proposal to resolve the issue of this communal service for a long-term period. This way, the quality of service provision is ensured for an extended duration by transferring responsibility and risk to the Private Partner.

Implementation of measures to reduce the population of harmful microorganisms, rodents, insects and other arthropods and the implementation of measures to suppress ragweed and other allergenic plants, ensures the provision of continuous DDP services in public areas of the Pančevo City for a period of 10 years.

What

Environmental impact	Social impact
➢ DDP reduce populations of harmful organisms that can transmit diseases to humans, animals and plants. This reduces the risk of infectious diseases that can threaten the health of the ecosystem	➢ Effective disinfection helps eliminate harmful pathogens, bacteria, and viruses from surfaces, reducing the risk of contagious diseases
➢ Insects or rodents can harm natural ecosystems by destroying plants or monopolizing vital resources. Regular population control of these organisms helps preserve biodiversity	➢ By controlling pests and rodents, the city experiences an improvement in the quality of life of its population; residents can live and work in spaces free from the damage and health hazards associated with infestations, which leads to increased comfort, productivity, and overall well-being.
➢ Pest population control can prevent the spread of invasive species that can cause ecological disasters by destroying local ecosystems	➢ By preventing property damage, reducing healthcare costs, and maintaining productivity, disinfection and pest control efforts contribute to economic stability and resilience at both local and global scales
➢ Pest control eliminates harmful pests while minimizing environmental impact through eco-friendly and sustainable methods. This includes integrated pest management techniques prioritizing non-chemical solutions, targeting specific pests, and minimizing harm to beneficial organisms and ecosystems	

PPP project for disinfection, disinsection and pest control in the City of Pančevo

Context and Strategy

UNECE

Who

The key players: public partner - **City of Pančevo** and **private partner – EkoSan** . In preparation period, all the risks are with the public partner (planning, deadlines for completing the documentation, time overruns and delays, obtaining necessary contents, public procurement procedure and budget planning). In the realization period, most of the risks are transferred to the private partner (deadline for delivery of vehicles and equipment, provision of service, professional workforce, work injuries, contracted fee payment). The obligation of the private partner is to provide financial and technical resources for the implementation of DDP measures, suppression of ragweed and other allergenic plants and guaranteeing the quality of service and the application of the quality preparations and technologies for the performance of activities.

Public partner monitors and informs the public about the implementation of these measures.

When

No	Activities	Date
1.	Decision of public body to begin the PPP procedure	November 8th , 2021
2.	Draft of the project proposal	July 15th , 2022
3.	Submitting project proposal to the Local-self-government Assembly	August 6th , 2022
4.	The process of issuing the opinion of the Commission for PPP	October 10th, 2022
5.	Public invitation for procurement of private partner	March 24th, 2023
6.	Signing and publication of the public contract	April 25th , 2023
7.	Beginning of performance of the complete contracted service	July 25th , 2023

The goal of this PPP project is to find the most adequate solutions for suppressing the appearance of harmful microorganisms, plants, rodents, insects and other arthropods while at the same time raising the quality of communal services, protecting flora and fauna, protecting the health of the population, as well as finding methods to suppress organisms that can be carriers of infectious diseases, their reservoirs, cause allergic reactions, have a toxic effect or are otherwise harmful to humans and their environment.

This project is a win-win solution for both private and public partner- it is financed by the private partner, leads to the reduction of budget costs, contribute to greater efficiency and effectiveness of communal services, which can be seen in improving the quality of life and health of the local population.

PPP project for disinfection, disinsection and pest control in the City of Pančevo

Access and Equity

UNECE

i) Increase access to essential services and promote equity

- By reducing the spread of diseases carried by pests and rodents, these services enhance public health outcomes, particularly in underserved communities where access to healthcare may be limited. This contributes to equity by ensuring that all residents in the City have a better chance for good health

- The PPP project for the performance of activities such as DDP and the suppression of ragweed and other allergenic plants ensures that the local self-government actively participates in planning and decision-making about the project, thus promoting social connection and involvement in the project.

- All residents in the City of Pančevo are provided with a complete and timely service

- This PPP project ensures quality assurance in service delivery

PPP project for disinfection, disinsection and pest control in the City of Pančevo

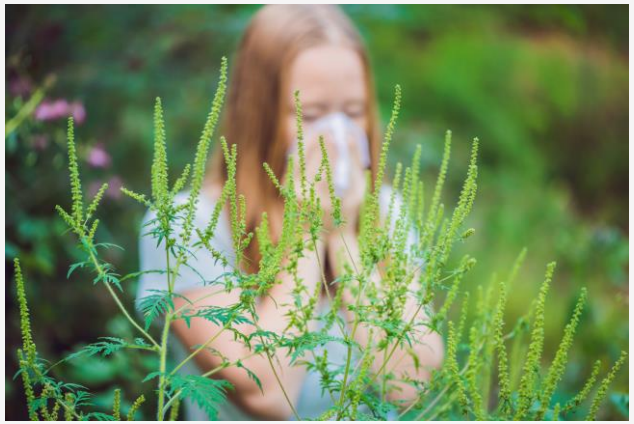
Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

- The compensation that the Private Partner will receive for the implementation of the disinsection and pest control treatment is **cca EUR 427,000 per year for all 10 years of the project (4,270,000 euros in total)**
- When it comes to disinfection services and suppression of ragweed, these services are carried out exclusively according to the needs of the Public Partner, and at the order of the Public Partner up to the amount of funds provided in the budget. The amount for performing disinfection services in an open area **is EUR 0.073 per m2, and in a closed area is EUR 0.06 per m2**. The amount for treating ragweed is **EUR 768 per hectare**
- For the quality performance of disinsection and pest control activities, it would be necessary to invest in the necessary vehicles and equipment. The value of the initial purchase is estimated at EUR 772,000
- Estimated operational costs of approximately EUR 319,000 annually
- The financial indicators of the profitability of the project are positive and show that the project is also profitable for a potential Private Partner. The net present value of Private Partner is EUR 29,000, the return period of the investment is 9.64 years and the IRR is 3,68%
- The net present value (NPV) of the Public Partner is EUR 904,000
- This project shows that by providing continuous DDP services in the City of Pancevo, timely recognition, response and suppression of unwanted consequences caused by harmful microorganisms, insects and other arthropods and rodents will be achieved, thereby achieving the protection of the population from infectious diseases, environmental protection, as well as preserving and improving the general health of the population.

iii) Develop a resilient infrastructure and improve environmental sustainability

- In this PPP project, chemicals are used that are less harmful to the environment and have a smaller carbon footprint that reduces the negative impact on the atmosphere. Environmentally friendly products and methods contribute to reducing the overall CO2 emissions associated with chemical treatments. The application of innovative technologies in the field of DDP and suppression of ragweed and other allergenic plants, such as smart devices, automatic dosing and monitoring systems, can increase the efficiency of services and reduce the need for repeated treatments. This can result in a reduction in resource and energy consumption, thereby reducing overall CO2 emissions



- Proper disposal and recycling of packaging for chemical products and equipment and other materials used in the provision of these services contributes to the reduction of CO2 emissions. Sustainable waste management reduces the negative impact on the environment

- Recycling plastic, glass or metal packaging that are used for the provision of DDP reduces the amount of waste that ends up in landfills

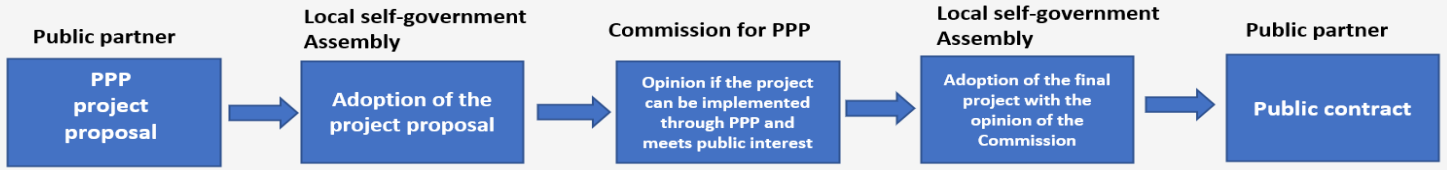
iv) Be replicable and scalable

- Successful strategies and approaches implemented in Pančevo for the DDP treatments are transferred to other municipalities in Serbia – Vršac, Kovin, Plandište and Alibunar
- The private partner is certified by the European confederation ***CEPA*** (Confederation of European Pest Management Associations), which confirms that he provides disinsection and pest control services in accordance with European standards
- Training programs for technicians and workers involved in disinfection and pest control services cover proper techniques, safety procedures, and the use of equipment and chemicals to ensure effective implementation of control measures
- The key criteria for measuring service quality in controlling harmful organisms involve **monitoring critical levels** before and after treatment to assess success. These critical values dictate the monitoring of service provision, obligating the private partner to maintain levels below these thresholds
- Private partner has the obligation to: possess all the necessary equipment and a sufficient number of personnel and technical capacity for the smooth performance of the activity, as defined in the tender documentation for the entire duration of the contract; implement disinsection and pest control measures, implementation of disinfection measures, suppression of ragweed and other allergenic plants by order of supervision

v) Engage all stakeholders

Steps in implementing the PPP procedure

- After deciding on the initiation of the public-private partnership procedure, the public body prepares the draft of the project proposal in accordance with Article 27 of the Law of Public-Private Partnership and Concessions
- The public body submits the PPP project proposal to the City Assembly or the City Council for adoption
- Once adopted, the project proposal becomes 'the project' and is submitted to the Commission for Public-Private Partnerships and Concessions to provide an opinion on whether the project can be implemented as a PPP and whether it serves the public interest.
- The City Assembly once again adopts the project with the opinion of the Commission
- The public body initiates the public procurement procedure for the selection of a private partner
- After the decision to award the contract, the final draft of the public contract with information of the selected private partner is submitted to the City Assembly for approval
- After signing, the contract is submitted to the Register of Public Contracts, and the private partner acquires the right and assumes the obligations established by the public contract



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PPP project for construction, reconstruction and maintenance of local road infrastructure in the Municipality of Ruma

Serbia

Project Proponent:	Jelena Tadić
Sector:	Road maintenance
Public Organisation:	Municipality of Ruma
Private Organisation:	Not yet selected
Capital Providers:	Equity financing
Estimated CapEx (USD)	9,381,758.9 $
Stage of the project	Development stage

Context and Strategy

Where

The project is located in the Municipality of Ruma (Serbia) area is 582 km² , population of 48,621

Why

The overall current condition of the road network can be assessed as inadequate, because of the problem of the increased traffic regime and the construction of several new residential, business and industrial buildings, which is why the Municipality submitted an initiative to resolve the issue of this communal activity for a longer period of time, applying the PPP model. This project is based on the idea of ensuring the availability of parts of high-quality traffic and other supporting infrastructure in urban areas of the Municipality and populated areas, through capital investment by a private partner.
In addition to construction, the private partner will do the reconstruction and rehabilitation while ensuring the development of project documentation, long-term regular maintenance on the entire territory of the Municipality, protecting and guaranteeing the quality of the works and services provided.

Environmental impact	Social impact
➢ Use of a sustainable alternative – **low-temperature asphalt** that is produced and installed at significantly lower temperature than hot asphalts (it heats up to 90, instead of 130 degrees, thus saving energy) ➢ Use of recycled material for the production of asphalt – **recycled asphalt** for all layers of roads leads to a reduction of 10 to 20% of CO_2 emissions, that is, about 10 million kilograms per year ➢ **Waterproof asphalt** reduces problems with surface water runoff ➢ Development and iimprovement of walking trails reduces the use of individual vehicles and thereby reduces emissions of harmful substances into the atmosphere	➢ Realization of this project will reduce traffic congestion, enhance mobility, and stimulate economic and community growth ➢ Smart road monitoring and management systems (smart traffic signs) will recommend to road users the safest speed at which their vehicle can move in current conditions. ➢ Attract new investors to a particular region ➢ The viability of economic zones and opportunities for new job creation encourage the economic growth of Municipality ➢ High-quality maintenance of roads enhance access to educational institutions

PPP project for construction, reconstruction and maintenance of local road infrastructure in the Municipality of Ruma

Context and Strategy

Who

The key players are the **public partner – Municipality of Ruma** and the private partner that will be selected in the public procurement procedure. Obligations of the public partner are: active participation in obtaining all permits, supervising the implementation of the project in accordance with the quality defined by the public contract; regular payment of the contracted fee to the private partner for regular and urgent maintenance and ensuring the availability of road infrastructure.

The obligations of the private partner are to provide financial and technical resources for the implementation of the project – investment in road construction in the first 4 years; reconstruction and rehabilitation and ensuring the availability of built infrastructure. The duration of the project is 10 years.

When

No	Activities	Date
1.	Decision of public body to begin the PPP procedure	July 7th, 2023
2.	Draft of the project proposal	January 31st , 2024
3.	Submitting project proposal to the Local-self government Assembly	February 05th , 2024
4.	The process of issuing the opinion of the Commission for PPP	May 10th, 2024
5.	Public invitation for procurement of private partner	October 8th , 2024
6.	Signing and publication of the public contract	November 9 , 2024
7.	Beginning of performance of the complete contracted service	December 12, 2024

How

Road safety boosts the economy through developed infrastructure, attracting investments and enhancing employment. Sustainable local roads ease access to educational and healthcare institutions, jobs, and markets. Well-maintained roads will reduce risk of traffic accidents, which directly affects the health of citizens and provide safe and efficient access to educational institutions. Waterproof asphalt will be a useful tool for reducing problems with surface water runoff. Smart monitoring and road management systems increase traffic safety. When an unfavorable change in driving conditions occurs, smart traffic signs independently calculate and reduce recommended speed to safest speed for the current driving conditions. Low- temperature asphalt reduces energy consumption

This project is a **win-win solution** for both private and public partner- it is financed by the private partner, leads to the reduction of budget costs, the growth of budget revenues, the creation of a sustainable road infrastructure as one of the biggest challenges of urban and communal requirements and raising the level of efficiency in providing service to the end users.

i) Increase access to essential services and promote equity

- The project improves the accessibility of this communal service, raising the level of equality, satisfying social justice and ensuring access and equity in the long term
- The goal of this project is to mitigate the physical and economic displacement of the population,improve access/travel to economic centres, access to essential services such as health, educational institutions and other important locations
- The PPP project for road infrastructure in Ruma will cover wide territorial areas, so that residents can travel from different parts of the Municipality, urban or rural areas to different destination
- The project will ensure that the roads are free of bumps and potholes that make traffic significantly more difficult and will provide comfortable, safe and efficient local road infrastructure, considering the needs and comfort of all users, including people with disabilities and senior citizens

ii) Demonstrate the economic effectiveness and financial sustainability of the project

- The impact of indirect economic benefits is estimated at 3.5% of the total investment amount of around **EUR 3,100,000.** The largest percentage refers to lower costs of motor vehicle exploitation due to investment in road infrastructure and represents 42.86% of indirect economic benefits, i.e. around **EUR 1,300,000.** It is estimated that the indirect effects will increase by 1% every year due to favourable impacts on citizens, the budget and the environment.

- Capital investment expenditures of **EUR 8,550,000** could be financed according to currently applicable borrowing terms on the financial market of the Republic of Serbia. The amount of the creditor's funds' bank would be up to 70% of the investment value, i.e. **EUR 5,985,000**, while the interest rate would be 9.50%, for the period of 7 years

- The bank arrangement would be **EUR 8,730,000 in total (**principal, interest and fees).

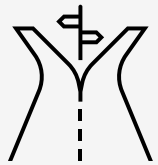
- The obligation of private partner is to deliver to the public partner original bank guarantee that would amount to a maximum of 10% of the contracted value for the availability of travel infrastructure

- The financial indicators are positive. The net present value of Private Partner **is EUR 114,000,** the **IRR is 6.26**%, while the payback period is 9.85 years

- The net present value (NPV) of the public partner is **EUR 733,000**

- **Investment in the reconstruction of road infrastructure will play an important role in the transition to a more competitive, safer and more sustainable infrastructure system in the future, because the social, economic and developmental role of the state is reflected in development and quality maintenance of road infrastructure**

iii) Develop a resilient infrastructure and improve environmental sustainability



- The project predicts the usage of green technologies, such as **recycled asphalt -** for all layers of roads, which leads to a reduction of 10 to 20% of CO2 emissions, that is about 10 million kilograms per year

- The project predicted the the usage of **waterproof asphalt that** allows water to pass through its surface - water can pass through the asphalt and infiltrate the soil below; this type of asphalt is often promoted as environmentally friendly, as it contributes to water runoff, maintaining the natural drainage cycle and reducing the need for sewage

- The implementation of **low-temperature** asphalt is also planned**.** It is produced and installed at significantly lower temperature than hot asphalts, it heats up to 90, instead of 130 degrees, thus saving energy and in this way protect the environment

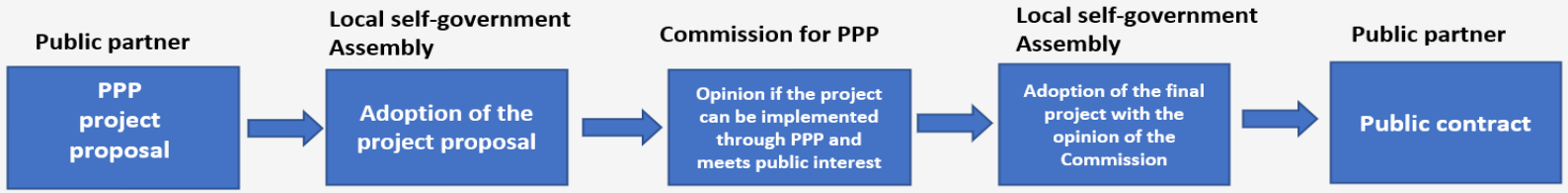
iv) Be replicable and scalable

- The advantage of this project is the transfer of modern technology for carrying out works on roads, transferring know-how from the private to the public sector which will improve capacity, knowledge and expertise in public sector
- This project mantains transparency and accountability at all stages of the project
- Realization of this project will lead to an increased number of related projects. Given that the circumstances will be known to both the public and the private partner, this will significantly improve the implementation process of such projects

v) Engage all stakeholders

Steps in implementing the PPP procedure

- After deciding to initiate the public-private partnership procedure, the public body prepares the draft of the project proposal in accordance with Article 27 of the Law of Public-Private Partnership and Concessions
- The public body submits the PPP project proposal to the City Assembly or the City Council for adoption
- Once it is adopted, the project proposal becomes "the project" and is submitted to the Commission for Public-Private Partnership and Concessions to assess whether the project can be implemented in the form of a PPP and if it meets the public interest
- The City Assembly once again adopts the project with the opinion of the Commission
- The public body initiates the public procurement procedure for the selection of a private partner
- After the decision to award the contract, the final draft of the public contract with information of the selected private partner is submitted to the City Assembly for approval
- After signing, the contract is submitted to the Register of Public Contracts, and the private partner acquires the right and assumes the obligations established by the public contract



8th International UNECE PPP Forum

Compendium of case studies

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PPP project for reconstruction of public lighting in the the City of Valjevo

Serbia

Project Proponent:	Obrad Tadić
Sector:	Energy
Public Organisation:	City of Valjevo
Private Organisation:	Smart Energy Investment, Interenergo
Capital Providers:	Equity financing (Interenergo)
Estimated CapEx (USD)	4,676,203.8 $
Stage of the project	Implementation stage

Public-Private Partnerships
for the Sustainable Development Goals

PPP project for reconstruction of public lighting in the City of Valjevo

Context and Strategy

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Where

The City of Valjevo, Western Serbia, population of 90.312 people, area of 905 km2; the number of implemented LED luminaires is 11.758, while the reduction of electricity consumption by annual basis is 4.655.732 kWh, which is 80%

Why

Previous condition: The previous public lighting system was inefficient and very poor quality. Inefficient public lighting system in the City led to large costs of the local-self government budget and to large losses and consumption of electricity. The City of Valjevo did not have sufficient financial resources and available technical expertise for the implementation of the public lighting reconstruction project, so the engagement of a private partner with the application of PPP model was the best solution. The realization of this project will result in savings in electricity consumption on an annual level of about 4,655,000 kWh of electricity. This PPP project is self-sustaining, as it is financed exclusively from the achieved savings in electricity consumption of as much as 80%,. The project envisages the achievement of additional financial savings in the City budget, which will amount to around 102,000 euros per year.

What

Social impact: **Environmental impact:**

Environmental impact	Social impact
➢ Replacement of public lighting system includes disposal of faulty mercury bulbs and in that way solves another important environmental problem	➢ Directional LED lighting does not disturb the residents because it does not illuminate their exterior walls or windows
➢ Modern LED technology provides directed light to a specific surface and prevents light pollution (this PPP project reduces light pollution by 50%)	➢ Quality LED lighting reduce the need for maintenance and become significant factor of traffic safety because of the better visibility on the road, especially on roads outside populated places
➢ Reduces carbon dioxide (CO2) emissions by 5,116 tons annually in accordance with the requirements of the European Union	➢ Public lighting has an aesthetic character, i.e. it beautifies the space
➢ LED lighting has multiple qualities in terms of health and environmental protection, because LED lighting is issued according to the RoHS (Restriction of Hazardous Substance Directive) system	➢ Improved lighting can contribute to economic development by attracting businesses, tourism, and investment to the area, particularly in urban centres
➢ Energy-efficient lighting technologies reduce the demand for electricity, leading to decreased reliance on fossil fuels and lower greenhouse gas emissions, thereby mitigating climate change impacts.	➢ Points to important spots in the city (bus station, rail station...) which signalizes to drivers that they are entering a zone where special caution is required

Public-Private Partnerships for the Sustainable Development Goals

PPP project for reconstruction of public lighting in Valjevo

UNECE

Context and Strategy

Who

The key players: joint venture of companies **Interenergo** and **Smart Energy Investment**. In preparation period, all the risks are with the public partner (planning, obtaining the necessary consent, time overruns and delays, completion of technical documentations and public procurement procedure). In the implementation period, most of the risks are transferred to the private partner (deadline for delivery of equipment and materials, luminaires installation, professional workforce, work injuries, contracted fee payment). In the guarantee period, most of the risks are transferred to the private partner (maintenance of PL system, payment of the service and risk for service price movement).

No	Activities	Date
1.	Decision of public body to begin the PPP procedure	October 31st, 2022
2.	Draft of the project proposal	March 31st , 2023
3.	Submitting project proposal to the Local-self-government Assembly	May 9th, 2023
4.	The process of issuing the opinion of the Commission for PPP	April 10th, 2023
5.	Public invitation for procurement of private partner	July 18th, 2023
6.	Signing and publication of the public contract	December 7th, 2023
7.	Beginning of performance of the complete contracted service	February 7th, 2024

How

- The first phase of the PPP project is the replacement of old lamps with efficient LED luminaires, realizing electricity savings on an annual basis, guaranteeing savings to the public partner, and ensuring maintenance." In order for the City to be able to implement the second phase of the project, so-called Smart City, it was necessary to achieve financial savings in the first phase in order to redirect the saved funds to the Smart City phase. So the implementation **of SMART CITY** (digital solutions for the benefit of its inhabitants and economy), will be enabled through savings achieved in the first phase of the project (PPP). The goal of the project is to reduce energy consumption and CO_2 emissions, air pollution and light pollution
- This project delivers public lighting that enables citizens to move safely through the streets thanks to improved illumination. It is estimated that this project will affect reduction in CO2 by 5,116 tons/year. LED technology provides directed light to a certain area and prevents light pollution and insects in the City, so the project affects the protection of the environment and biodiversity. By implementing SMART technology into the public lighting system, the City will optimize resource usage, improve the quality of life for residents, enhance safety and security and contribute to a more sustainable and resilient environment

This project is a **win-win solution** for both private and public partners – it is financed by a private partner without debt of the public budget. The private partner is responsible for long-term maintenance and guarantees achieved savings and quality and so the project leads to sustainable public lighting.

PPP project for reconstruction of public lighting in Valjevo

i) Increase access to essential services and promote equity

- The reconstruction of the public lighting system in Valjevo ensures that essential services such as adequate lighting for streets, sidewalks, and public spaces are available, which enhances safety, security, and accessibility for residents
- By providing equal access to safe and well lighted public spaces, the project contributes to social justice by reducing inequality in service provision
- Better lighting in Valjevo contributes to the promotion of health and well-being. It encourages physical activity, community interaction, and access to recreational facilities, ultimately benefiting the overall health of residents, including the economically vulnerable
- This project prevents conditions for limiting night-time light glare, light pollution and the reduction of disturbing or intrusive light that can be caused by such installations

PPP project for reconstruction of public lighting in Valjevo

Economic Effectiveness and Financial Sustainability

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ii) Demonstrate the economic effectiveness and financial sustainability of the project

- The project envisages the achievement of additional financial savings in the City budget, which will amount to around **102,000 euros per year**
- The project is entirely financed by the Private Partner without any indebtedness on the City's part, and the fee to the Private Partner is paid from the realized savings. The total investment of the project is estimated **at 4.2 million euros**, which will be invested for the purchase of equipment and implementation immediately after the conclusion of the Public Contract
- The costs of the public lighting system that the City of Valjevo currently has **- EUR 940,000** per year of which **EUR 883,000** are electricity costs, and **EUR 55,000** to public lighting system maintenance costs
- The net present value of private Partner is **EUR 351,000**, the IRR is **6.85%,** while the payback period is **13,48 years**
- The net present value (NPV) of the public partner is **EUR 1,136,000**
- The private partner undertakes to perform the services of implementing luminaires with LED technology, guaranteeing the quality of the equipment, achieving savings in electricity and guaranteeing, reducing CO2 emissions and long-term maintenance of the public lighting system
- The City of Valjevo will have increased safety for pedestrians and other road users, as well as a healthier environment, which is aligned with the 2030 Agenda for achieving the Sustainable Development Goals (SDGs) and the circular economy

PPP project for reconstruction of public lighting in Valjevo

Environmental Sustainability

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iii) Develop a resilient infrastructure and improve environmental sustainability

- The lifespan of LED luminaires is 5 times longer than ordinary lamps, so there is less need to constantly change them
- First phase of the project (PPP) is replacement of old lamps for efficient LED luminaires, realization of electricity savings on an annual basis, guaranteeing savings to public partner and maintenance. In order for the City to be able to implement the second phase of the project, so-called Smart City, it was necessary to achieve financial savings in the first phase in order to redirect the saved funds to the Smart City. So the implementation of **SMART CITY** (digital solutions for the benefit of its inhabitants and economy), will be enabled through savings achieved in the first phase of the project (PPP). Goal of the project is to reduce energy consumption and CO_2 emissions, air pollution and light pollution
- Project reduces CO2 emissions by 80%, i.e., a total of **76,749 tons** of CO2 and guarantees electricity savings of **69,835,986 kWh**
- LED lighting is more energy efficient type of lighting when converting electricity into light, does not contain mercury and other harmful components
- The light from the most adequate spectrum of around 3000K is used, which is less attractive to insects and reduces the risk of their appearance in urban areas
- By replacing energy-inefficient lamps with energy-efficient LED luminaires, significant savings in electricity are achieved and environmental protection is significantly improved
- Using LED luminaires, the annual amount of produced and **broken lighting fixtures decreases by 95%** and in that way this project contributes to circular economy
- A public lighting system that incorporates a harmful waste management plan contributes to a circular economy in several ways:

- By designing lamps with longer lifetimes - fewer lights need to be replaced, which reduces the amount of waste generated. Using sustainable materials such as LED luminaires instead of traditional incandescent lamps can reduce the amount of waste generated. LED lamps last longer and consume less energy, resulting in less waste
- By scheduling regular maintenance and replacements - faulty lights can be identified and repaired or replaced before they fail, reducing the amount of waste generated
- Recycling and repurposing: By recycling and repurposing used lights and materials are kept out of landfills and instead can be used again in new products, resulting in less waste
- By using energy-efficient lighting, less energy is consumed, which reduces the amount of waste generated through the production of electricity

PPP project for reconstruction of public lighting in Valjevo

Replicability

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iv) Be replicable and scalable

- This project guarantees the quality of lighting and the achievement of energy saving measures throughout the duration of the contract, in accordance with the **European standard EN 13201** which is fully adopted in the Serbian legislation
- The public contract is concluded in accordance with a bylaw– the model contract on energy service for the implementation of measures to improve energy efficiency in savings in the operating costs of public lighting (EPC)
- The realization of this project is followed by an application for the preparation, monitoring, implementation and quality assurance, which gives real-time data of the project
- This kind of public lighting system is sustainable for many years and achieves large financial benefits for the local self-governments
- Private partner has the obligation of: preparation and development of project documentation, procurement, transport and installation of equipment, management of works on the replacement of existing lamps for energy efficiency ones, in accordance with the introduction of LED systems and the regulation of world equipment, in accordance with the equipment prescribed by law and with the legal regulations; maintenance of projects and installed elements of public lighting for the duration of the contract, with the aim of reducing budget costs and raising the level of efficiency in the provision of energy services
- This Energy Performance Contract (EPC) concluded in Valjevo is being applied in other local self-governments in Serbia – Kula, Žitište, Kanjiža, Užice

PPP project for reconstruction of public lighting in Valjevo

Stakeholder Engagement

v) Engage all stakeholders

- Different stakeholders are included in this project: City of Valjevo (Council and Assembly), Private partners - Interenergo and Smart Energy Investment (who guarantee for the quality of lighting and for achieving energy efficiency measures in the entire duration of the contract -15 years), Manufacturer of LED luminaires - Philips Lighting, Commission for PPP, etc…

Steps in implementing PPP procedure

- After deciding on the initiation of the public-private partnership procedure, the public body prepares the draft of the project proposal in accordance with Article 27 of the Law of Public-Private Partnerships and Concessions
- The public body submits the PPP project proposal to the City Assembly or the City Council for adoption
- Once adopted, the project proposal becomes “the project” and is submitted to the Commission for Public-Private Partnerships and Concessions to provide an opinion on whether the project can be implemented as a PPP and whether it serves the public interest.
- The City Assembly once again adopts the project with the opinion of the Commission
- The public body initiates the public procurement procedure for the selection of a private partner
- After the decision to award the contract, the final draft of the public contract with information of the selected private partner is submitted to the City Assembly for approval
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Compendium of case studies

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01. Argentina	Córdoba Cluster Program
02. Brazil	Smart Goiania PPP
03. Brazil	Smart Maceio PPP
04. Brazil	Integrated Sanitation PPP
05. China	Xiaoqing River Revival Project
06. Ethiopia	Refurbishing Lithium Ion Battery and Solar Systems
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08. Greece	Student Accommodation PPP
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17. Tunisia	Collective Water Sanitation Service in the South of Tunisia
18. Ukraine	New Multidisciplinary Hospital in Zhytomyr
19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

Sedibeng Fresh Produce Market, South Africa

SFPM

Overview

UNECE

Project Proponent:	Sedibeng Fresh Produce Market (SFPM)
Sector:	Agriculture
Public Organisation:	Sedibeng District Municipality (SDM)
Private Organisation:	Project in procurement process. Private organization to be established at implementation
Capital Providers:	Project in procurement process. Private organization to be established at implementation
Estimated CapEx (USD)	$23.38 million
Stage of the project	Development stage / Implementation stage

Where

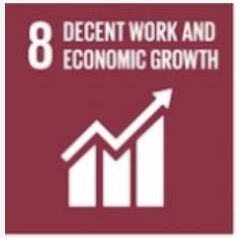
The Sedibeng District Municipality is in the southern part of the Gauteng Province and is responsible for the Emfuleni, Midvaal and Lesedi Local municipalities.

Why

The SFPM is situated in a located in predominantly lower to middle class income communities. Re-establishing the VFPM will attract producers (both large and small) to take advantage of the large customer base, enabling customers of fresh produce to purchase their required goods within the market's catchment rather than travelling to other markets which are a distance away. The market is situated in the middle of a substantial buyer population so the possibility of gaining market share gain is possible to promote food security.

What.

This will be of specific importance to Small, Micro and Medium Enterprises (SMMEs) who currently need to travel to Johannesburg to get similar goods directly from producers. Emerging farmers, agencies, retailers. SEIA report.



Who

Sedibeng District Municipality, Emfuleni Local Municipality, Provincial Treasury , National Treasury, Gauteng Department of Agriculture and Rural Development, Gauteng Department of Economic Development, National Department of Agriculture, Land Reform and Rural Development, Department concerned with Local Government Affairs and other State Departments, Community & IAPs, IMASA

When

TVR I: Needs analysis, Options analysis, Project due diligence, Value assessment, Economic valuation, Procurement plan.

TVR II A:Design a fair, equitable, transparent, competitive, cost-effective procurement process, Prepare bid documents, including draft PPP agreement.

TVR II B: Pre-qualify bidders: Issue request for proposals with draft PPP agreement, Receive bids, Compare bids with feasibility study and each other, Select preferred bidder, Prepare value-for-money report – In progress

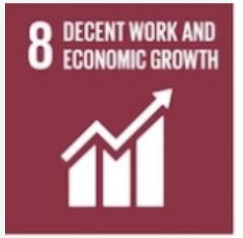
TVR III: Negotiate with preferred bidder: Finalise PPP agreement management plan

How

- **SDG 2** : Zero hunger
- **SGG 3:** Good Health and Well-being
- **SDG 8**: Economic growth economy by introducing new manufacturing technologies, re-industrialising Emfuleni Local Municipality and GP and diversifying the economy and leading Africa's new industrial revolution.
- **SDG 12**: Responsible consumption and production.

i) Increase access to essential services and promote equity

- Food security- The Market will facilitate partnerships between various stakeholders, including small producers, distributors & local communities, to ensure fair & inclusive participation in the market's activities. Through collaborative efforts and resource-sharing, the market will work towards reducing inequalities and increasing access to fresh produce, food security & thereby contributing to sustainable development, job creation and fostering economic growth in the region.



ii) Demonstrate the economic effectiveness and financial sustainability of the project

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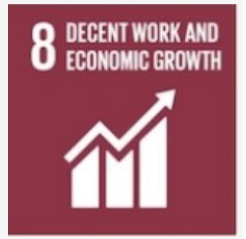
- The project can create job opportunities for local farmers, traders, and market staff, contributing to economic growth and poverty reduction.
- Direct Impact R $ 8, 158 000m; Indirect Impact $ 13, 000.00 m; Induced Impact R $ 2,958 886m;
- Total GDP impact for Operations is estimated to be $ 23, 350 000 m annually.

iii) Develop a resilient infrastructure and improve environmental sustainability

- The Sedibeng District Municipality will develop resilient infrastructure by implementing eco-friendly practices such as renewable energy use, efficient water management systems, and waste reduction strategies, while also investing in infrastructure that can withstand environmental challenges like climate change and natural disasters.
- Additionally, the market will prioritize sourcing produce from sustainable farming practices, supporting local growers who employ regenerative agriculture methods and minimizing its own environmental footprint through responsible resource management and waste reduction initiatives.



iv) Be replicable and scalable

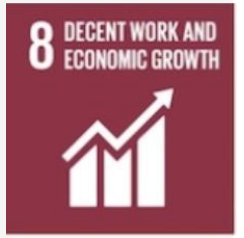
- Sedibeng Fresh Produce Market is and can be replicable as there is already existing Fresh Produce Markets in the province;

Positive Effects on Other Sectors: The establishment of the market can have ripple effects across various sectors, including agriculture, transportation, tourism, and retail;

Expansion and Growth: The Sedibeng Fresh Produce Market can plan for expansion and growth to meet increasing demand and accommodate future needs;

Collaboration and Partnership: Collaboration with government agencies, private sector stakeholders, and community organizations is essential for supporting the growth and sustainability of the market; Market Innovation and Differentiation: To sustain growth and remain competitive, the market can invest in innovation and differentiation strategies.

Partnerships: Collaboration between public and private sector entities is essential for the success of projects like the Sedibeng Fresh Produce Market. Public sector stakeholders, such as local government authorities and regulatory agencies, would have been involved in providing permits, approvals, and infrastructure support;.



v) Engage all stakeholders

- Public Sector Stakeholders- 60 days public notice, RFQ & RFP by the municipality was done.
- Private Sector Partners- Market sounding with potential investors was completed.
- Civil Society Organizations
- Academia and Research Institutions
- Labour Organizations
- Agricultural Organizations

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Public-Private Partnerships for the Sustainable Development Goals

ROOFTOP SOLAR PV – PHASE 1

Overview

Installation of solar PV panels on 16 Government-owned buildings

UNECE

Project Proponent:	Gauteng Department of Infrastructure Development (GDID)
Sector:	Energy
Public Organisation:	Gauteng Department of Infrastructure Development, & the Gauteng Department of Health
Private Organisation:	Red Rocket (Developer)
Capital Providers:	Amalgamated Banks of South Africa (ABSA)
Estimated CapEx (USD)	R153 000 000 /$8 000 000 (exchange rate dated: 12 February 2024)
Stage of the project	Development stage

7 AFFORDABLE AND CLEAN ENERGY

Rooftop Solar PV Phase 1

Context and Strategy

Where

The project is located across different areas of the Gauteng province. Phase 1 will include installation of solar panels in 16 health facilities in the Johannesburg, Ekurhuleni and Tshwane Metropolitan municipalities and West Rand district.

Why

South Africa is faced with a severe energy crisis characterized by enforced power cuts that have worsened each year over a period of 15 years. Government facilities are not excepted from these power cuts including primary healthcare facilities such as district and academic hospitals as well as community health centres. Power outages in healthcare facilities can result in the interruption of primary healthcare services and loss of critical life-saving medical equipment. In severe cases, healthcare facilities can be without electricity for at least 8 hours (stage 5 loads heeding). The installation of solar panels in health facilities will ensure that facilities generate their own power, reduce dependence on the grid and achieve a cost saving that can be reinvested in patient care.

The Feasibility Study of the project focused on: site selection & suitability, proximity to grid infrastructure, historical weather data, power demand and consumption assessment and system design; needs assessment and alignment of the project with strategic objectives of the province, country and development goals; economic valuation and financial modeling. Private investment will enable the government to leverage on private capital, expertise and technical to support development of renewable energy.

What

The rooftop PV project is a PPP project in which an independent party would come in and design, fund, procure, install, maintain and operate the rooftop solar infrastructure on 16 government-owned healthcare facilities for a pre-determined period of 20 years. The use of renewable energy, particularly solar energy will substantially reduce greenhouse gas emissions, ensure energy sustainability, and reduce the government spending on power thus ensuring equal access to basic services to all citizens of the province.

Public-Private Partnerships
for the Sustainable Development Goals

Rooftop Solar PV Phase 1

Context and Strategy

UNECE

Who

- Gauteng Infrastructure Financing Agency – project preparation. Development of the feasibility study and management of the project procurement process.
- Gauteng Department of Infrastructure Develop (GDID) – owner of government buildings and implementing agent.
- Gauteng Department of Health – end-user.
- Gauteng Provincial Treasury – ensure compliance of the project procurement and financing activities with public procurement prescripts.
- National Treasury – regulator of PPPs in South Africa. Ensures compliance and approval of the four stages of the PPP process (feasibility, procurement, value for money and PPP agreements).
- Red Rocket – private developer responsible for financing, construction and operating the solar panels.

When

The project comprises of the following key milestones as guided by Treasury Regulation 16 (TR16):

- Registration of the project as a PPP with National Treasury. – completed.
- Project preparation and planning – development of the feasibility study. – completed.
- Treasury approval (TAI) – National Treasury approval of the feasibility study.- completed.
- Treasury approval (TAIIA) – Development of procurement process including the tender documents. – completed.
- Treasury approval (AIIB) – Issuing the tender to the market, pre-qualifying of bids, issue requests for proposals, selection of preferred bidder. – completed.
- Treasury approval (TAIIB) – Negotiations with the preferred bidder and finalizing PPP agreement management plan. – In progress.
- Treasury approval (TAIII) – Signing of the PPP agreement.
- Implementation and contract management.

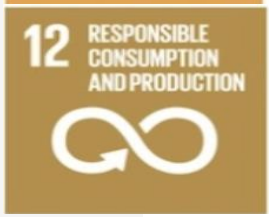
How

The Rooftop Solar project is linked to the following UN Sustainable Development Goals Agenda 2030

- SDG 7 – The project plays an important role in the development of affordable energy security and sustainability in South Africa that focuses on reducing reliance on fossil fuels and greenhouse gas

emissions.

- SDG 11 - Generation and supply of electricity healthcare facilities in townships and low to medium income earning areas will reduce reliance on coal-powered plants and thus reduce pollution.
- SDG 12- Supply of cleaner and safer energy.
- SDG 13- The use of solar energy will significantly reduce greenhouse gas emission thereby mitigating climate change.



Rooftop Solar PV Phase 1

Access and Equity

i) Increase access to essential services and promote equity

- The investment in solar energy offers significant cost savings, allowing the Gauteng Department of Health the opportunity to redirect/reallocate funds towards improved patient care and health infrastructure.
- With access to adequate and reliable electricity supply, healthcare facilities can provide uninterrupted care for longer periods, consult more patients daily and offer emergency services round the clock.
- Targeted healthcare facilities are located in townships made up of low-income households. Battery back up systems will ensure 24-hour access to electricity that will ensure that healthcare facilities provide uninterrupted medical services to the poor/underprivileged.

Rooftop Solar PV Phase 1

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

The value assessment conducted analyzed different ways in which the project could be procured based on affordability, risk transfer and value for money.

The PPP model scored best based on the fact that it does not face budgetary constraints, transfers most of the risk to the private party while achieving value for money.

- **Source of debt**: Commercial senior debt - the PPP model assumes a basic capital structure of a combination of commercial senior debt and private equity at a 70:30 ratio.
- **Source of equity**: Private equity.
- In the successful implementation of this project an independent party would be required to fund, procure, install, maintain and operate the solar infrastructure for a pre-determined period of 20 years through a PPP procurement model.
- A $6 000 000 increase in total household income of the local economy is expected, with an investment of $64 000 and $ 32 000 in supplier development and enterprise development respectively.
- The project promotes the participation by historically disadvantaged citizens and marginalised groups through equity and subcontracting, with a preferential procurement spending of over $5 000 000 and a targeted 80% local content target.

Rooftop Solar PV Phase 1

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

- Solar systems have the ability to generate electricity with zero carbon emissions and the fact that solar can work as a stand-alone power generation facility, independent from a grid connection allowing solar to be implemented in remote and rural areas.
- The project is in alignment with the country's commitment to an intended nationally determined contribution (INDC) of 42% carbon emission reductions by 2025.
- For each kilowatt hour (kWh) produced by solar power, at least a kilogram of CO^2 emissions from a coal-fired power station is prevented (SSEG handbook, 2019).
- Each installed 1 kilowatt peak (kWp) of solar PV can produce between 3.6 and 5.5 kWh per day, which means between 3.6 and 5.5 kg of CO^2 can be prevented for each kWp of solar PV installed.
- Solar panels have an average life expectancy of 10-20 years. Therefore, solar technology is clean, friendly to the environment and requires low maintenance.

Rooftop Solar PV Phase 1

Replicability

iv) Be replicable and scalable

The South African government has prioritized the adoption of renewable energy through various programmes including the Renewable Energy Independent Power Producer Procurement (REIPPP) programme which incentivizes private investment in renewable energy. This is a driver for increased investment in solar energy and its accessibility across the country.

Procurement - to date, the South African government has installed over 1.5 gigawatts (GW) of solar capacity through PPPs across the country. The development of solar energy through PPPs is replicable.

Replicability – this a pilot project rolled out in three phases. The successful implementation of phase 1 will unlock phase 2 and 3 seeing the installation of solar panels on over 500 Gauteng government facilities (generating approximately 80MW of electricity over the next three years). Solar technology is readily available and accessible.

Scalability – flexibility of solar technology allows for adaptation and expansion by integrating additional components onto the existing design based on the site and energy demand.

v) Engage all stakeholders

The project leveraged on the knowledge and expertise from various stakeholders including public, private and research organisations to identify the best solution for the benefit of the Gauteng government and ultimately, the citizens of the Gauteng province. The following stakeholders were engaged and formed part of the development process of the project:

- **Gauteng Department of Infrastructure Development (GDOH)**– the owner of government buildings on which solar panels will be installed. GDID participates in major project decisions through the project steering committee and signory of the PPP agreement.
- **Gauteng Department of Health (GDOH)**– is the end-user and direct beneficiary of the energy to be generated through this project. As the party paying for the service, GDOH is concerned with affordability and reliability of the service.
- **Private sector partner** – invests funds, expertise and technology to be used in meeting the needs of the public sector. As such, assumes major portion of the risk related to the financing, construction, operation and maintenance of the project. The PP's interests or concern are around access to the governance facilities/buildings, structural integrity of the buildings and timely provision of required licenses.
- **Local government** – this refers to municipalities in which the health care facilities are based. Municipalities assist with the application of generation licenses to NERSA.
- **Eskom-** responsible for the generation, transmission and distribution of approximately 95% of the electricity used in South Africa.

- **Regulators:**
  - **National Treasury** – regulation of the entire PPP life-cycle to ensure fair, efficient and effective procurement processes. National Treasury is concerned with the issues of value for money and affordability of the technology as well as procurement model.
  - **NERSA**- is responsible for implementing government energy policies, plans and acts. In particular, NERSA is responsible for implementing the unbundling and liberalization of the electricity sector. NERSA is the responsible for granting generation licenses to municipalities.

Public-Private Partnerships for the Sustainable Development Goals

UNECE PPP and infrastructure award 2023

Compendium of case studies

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CoJ AWTT

Overview

City of Johannesburg Alternative Waste Treatment Technology (AWTT)

Republic of South Africa

Project Proponent:	City of Johannesburg (CoJ)
Sector:	Waste and generation of renewable energy / Waste to Energy Facility
Public Organisation:	City of Joburg, Gauteng Infrastructure Financing Agency (GIFA), Development Bank of Southern Africa (DBSA) and Gauteng Provincial Treasury.
Private Organisation:	Transactional advisor
Capital Providers:	Public Private Partnership (PPP) Delivery Model / Project Finance: CoJ and the Private Party will also enter into a Direct Agreement with the Lender/s, with a potential capital contribution from the City.
Estimated CapEx (USD)	USD 300 million
Stage of the project	Market Release

City of Johannesburg AWTT

Context and Strategy

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Where

Project location: City of Johannesburg (CoJ)

CoJ population: 6.2 million

Key economic sectors: Waste; Energy; finance and community services

Why

Landfills in CoJ and Gauteng are running out of airspace. As remaining facilities take on more waste from closed landfills, they will also run out of space. Landfill disposal in Gauteng will soon be costly due to limited space and higher demand. Waste transport costs will also increase due to longer distances and more transfer facilities needed.

PPP allows a municipality to meet goals, oversee projects, and share risks with private parties. However, the municipality's balance sheet remains less encumbered, except in case of default. Shareholder returns are paid as a premium for the cost of capital.

City of Johannesburg AWTT

Context and Strategy

What

The project was initiated within CoJ in response to its rapidly increasing landfill airspace demand based on the City's Constitutional duty to ensure waste management service delivery and societal health. This includes Municipal Solid Waste (MSW) management services; a function of which is treatment and disposal of MSW. The remaining airspace at existing landfills in CoJ is being consumed at a rapid rate. The City requires alternative disposal solutions and has explored options such as the AWTT which is in line with the national waste management strategy and approach to waste management. The project is strategically important for the City, the Province, and the country to start implementing waste management alternatives to landfill disposal to comply to Conference of Parties (COP) 27 Emissions standards and objectives.

Who

CoJ, PikitUp, Gauteng Treasury , National Treasury, CAPIC (TA).

When

The project has been registered with National Treasury as a PPP.
The feasibility study is completed.
Current Stage: Awaiting to release the project to the market.

How

Project Finance through PPP Procurement Mechanism

City of Johannesburg AWTT

Access and Equity

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i) Increase access to essential services and promote equity:

1. Enables the participation of the informal waste sector and provides waste management services to the disadvantaged township areas.
2. Environmental benefit of energy recovery through Waste to Energy instead of loss through landfilling;
3. Waste management in line with Environmental legislations and International Commitment on
4. waste and environmental management, which increases access to essential waste management services.
5. Contribute to electricity production to reduce the electricity outages;
6. Generation of renewable energy from municipal solid waste; and
7. Job creation during construction and operational phases, which will contribute to the informal waste management sector.

ii) Demonstrate the economic effectiveness and financial sustainability of the project

Status Quo / Do Nothing Approach

The results of not intervening are that the City will have to rely on landfilling as the only waste disposal solution. The constraints and challenges in providing additional landfill airspace for all areas of the City are prohibitive and will result in the following:

1. Increased transport costs for waste disposal;
2. Increased fleet and fleet management logistics;
3. Increased disamenity costs due to more landfills in and around the city;
4. Increased dependency on private landfills which may increase the City's costs over time; and
5. Violation of environmental regulations and international standards especially when the City is necessitated to dump waste beyond the available airspace.

Benefits of the Project Implementation

The outcomes that are targeted through the successful execution of the AWTT PPP Project are:

- Diverting at least 500 000 tonnes of MSW per annum away from landfills;
- Generate ±28MW electricity from municipal solid waste; and
- Creating jobs during construction and operational phases, 2000 jobs during construction and 600 jobs during operations (permanent).

The project is strategically superior to alternative waste disposal solutions such as landfilling since the long-term financial and economic benefits exceed the costs. The challenge with realising this benefit is that the short-term cost of landfilling (as alternative solution) is lower, albeit not cost reflective, and therefore remains attractive due to the City's constrained financial position. The tipping point distance where landfilling becomes more expensive than AWTT is dependent on distance of the waste collection. The AWTT revenue generation will consist of mainly gate fees, electricity generation and recyclables sales which will be used to obtain necessary fundings from relevant institutions to finance the project.

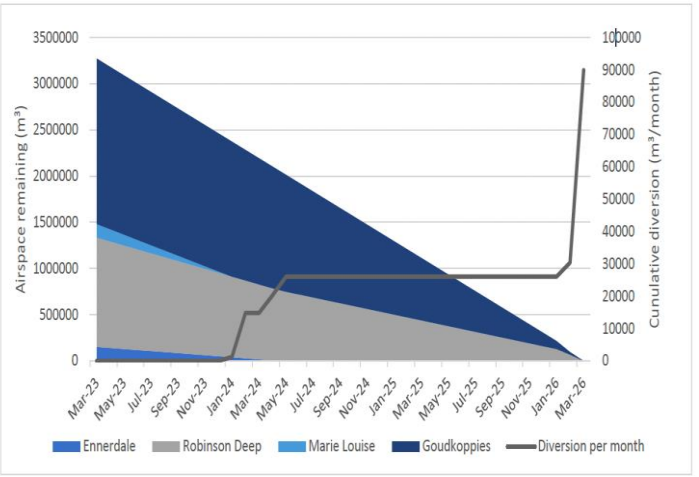
iii) Develop a resilient infrastructure and improve environmental sustainability

The waste flow model conducted for the project would see the diversion of waste to landfill and thereby increasing the life/lives of other landfills. Infrastructure improvements delivered by the project through:

- Upgrading of Transfer stations to receive MSW,
- The construction of Material Recovery Facilities for separation and recycling of the waste,
- The new development of the waste 'power station' to generate much needed capacity to the grid.

The mechanical enhancements in the emissions scrubbing equipment would ensure mitigation against the usually emission intensive operations of an incinerator plant. Being in an Air quality high priority area, this is imperative.
In the second iteration of the financial model, the option of waste transport by road was replaced to rail, this to see financial viability as well less transport related emissions. Further to support the flailing rail infrastructure market (Transnet) in the country and also preserve and lengthen the life of the road infrastructure currently seeing damage by heavy vehicles.
The development of this Waste to energy plant and its associated facilities would bring waste management in the city up to international standard, compliant to the integrated waste management plan and at a cost that the City can afford in the long term.

Figure 4 Projections of remaining airspace per operating site (domino effect)



Source: *Adapted from Annexure E, Landfill Survey Report for Pikitup, March 2023*

City of Johannesburg AWTT

Replicability

iv) Be replicable and scalable

The project is scalable through modularity of the onsite waste treatment solution. Similar waste to energy projects are in development in the City of Tshwane and the City of Ekurhuleni.

The current design of the CoJ AWTT accounts for the incineration of 500 k tons of diverted waste, this is only a third of the City's waste arisings; as the waste flow model predicts that while diverting waste, the population growth would eventually result in more waste. The current capacity of the plant could be doubled in the event of more waste. The surrounding metropoles in the province could also divert waste to this plant and due to its modular nature, the plant capacity can be increased.
The Integrated Waste Management Facility/ies (IWMF) around the province would work as feeder stations to the incinerator plant and deliver a hub and spoke model for the treatment of MWS with the WtE site as the center.

While the GIFA works to prepare the City of Tshwane for their AWTT site, the 2 facilities in the province would work symbiotically to cater for the North (Tshwane) and the South (CoJ) of the Gauteng Province. Similarly, the Tshwane city AWTT design is modular and is fed by surrounding IWMFs

City of Johannesburg AWTT

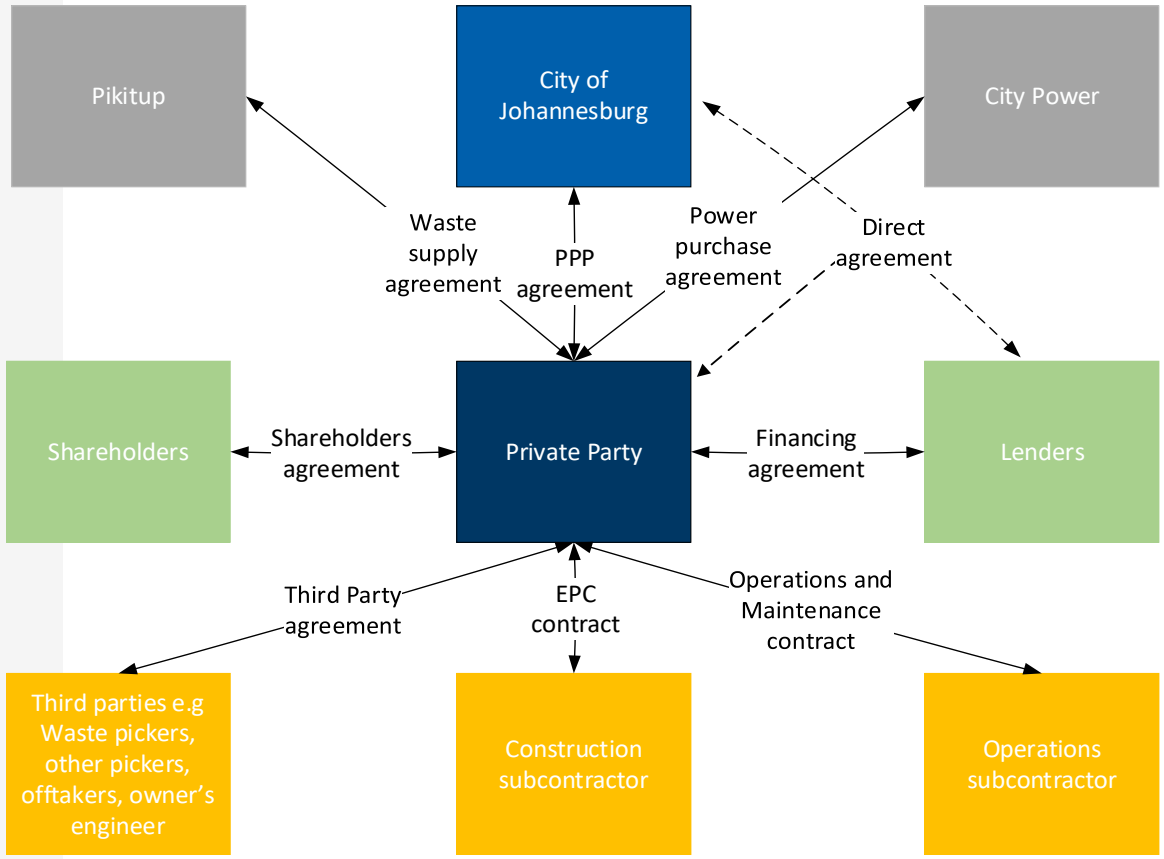
Stakeholder Engagement

v) Engage all stakeholders

The AWTT has already submitted received an approval of the **Environmental Impact Assessment (EIA)** from the National Department of Environment. The submission consisted of specialist studies in air quality, biodiversity and water management.

An integral component of the EIA process is the **Public participation process**; this focuses on engagement with interested and affected parties to the project. The EIA practitioners conducted interviews and consultations with **relevant Departments and communities** related to the project and these were not met with significant resistance. Groups indicating objection to the projects would have to be managed through the **Environmental Management plan (EMP)** so as to mitigate the effects of their perceived negative impacts of the project.

The Record of Decision (RoD) also mandates the Project owner to constantly manage all impacts and communicate relevant mitigations. Failure to comply to these would result in the project being stopped; the concessionaire then would be held to the RoD and EMP of the project to manage any and all negative impacts.



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Compendium of case studies

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Concession for Collective Wastewater Sanitation Service

Overview

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Concession Project for Collective Wastewater Sanitation Service in the South of Tunisia

Tunisia

Project Proponent:	The National Sanitation Utility (ONAS)
Sector:	Water
Public Organisations:	ONAS / the ministry of environment /PPP Unit- IGPPP / the national water distribution utility (SONEDE)
Private Organisation:	**Consortium :** SUEZ/SUEZ INTERNATIONAL/SEGOR/ SCET TUNISIE/ SOGEDIP/BIAT INTERNATIONAL **SPV** : SUEZ Concession Assainissement Sud Tunisien
Capital Providers:	**ONAS :** a loan of 113.6 million euros from the world bank (this amount is assigned for the whole project (south and north), revenues from users and a balance grant from the state. **Private partner**: 40% equity and 60% Debt
Estimated CapEx (USD)	80 millions EUR (87,55 millions USD) 90 millions EUR (whole project south and north) (98,49 millions USD)
Stage of the project	Development Stage

Concession for Collective Wastewater Sanitation Service

Context and Strategy

Where

The project is located in the south of Tunisia. It will serve approximately 960 000 residents in Sfax, Gabès , Medenine and Tataouine governorates.

Why

Prior to the intervention, Tunisian communities struggled with inadequate sanitation, especially in rural areas, and even urban sanitation infrastructure was overwhelmed. ONAS's facilities, including wastewater treatment plants, were overburdened, operating beyond their intended capacity, which led to the need for improvements. Detailed studies during the feasibility phase revealed inefficiencies in the existing approach and highlighted the potential benefits of a public-private partnership (PPP). Thus, to enhance service quality without excessive cost, ONAS shifted towards a PPP model, seeking to harness private sector efficiencies and expertise in a results-driven contract.

What

This project aims to improve the performance of sanitation services through greater efficiency in the operation and maintenance of wastewater collection and transport networks and, the achievement of environmental standards for the discharge of effluents into the natural environment. A third objective is to limit as much as possible the increase in sanitation costs and its impact on the financial situation of ONAS in order to minimize tariffs and public subsidies. A fourth objective is to respond to the need to replace retiring ONAS staff, and to recruit additional human resources to operate new works.

Concession for Collective Wastewater Sanitation Service

Context and Strategy

Who

Keys players include ONAS, the private partner (SUEZ consortium), SPV : Suez concession assainissement sud tunisien , PPP Unit (IGPPP), the World Bank, SONEDE, users. A register of risks and their impacts as well as the prevention and corrective measures to be undertaken by ONAS and the private partner was prepared during the feasibility study and was updated before signing the contract. Tasks and responsabilities were shared for the initial rehabilitation of the wastewater treatment plants and pumping stations, additional works and major maintenance-renewal (GER).

When

Project planning: feasibility study (2016), prequalification notice(2017), approval of applications results from IGPPP and the world bank (2018), tender notice (October 2019) , approval for the evaluation of technical and financial proposals from IGPPP and the workd bank (June 2021), contract signature 21/04/2023 .
Government approval: Council of Ministers (2013, 2016-2021) , the ministry of environment and the PPP UNIT (IGPPP).
Procurement: a restricted call for tender preceded by prequalification.
Commercial/financial close: commercial close : 21/04/2023, financial close: 02/06/2023.
Startup of operations: the first semester of 2024 .
Maintenance period: starting for the second year till the 10th year .
Contract term : the contract is concluded for a period of 10 years of the effective date. The duration of the contract may however be extended in accordance with and within the limits of texts applicable to ONAS and public service concession.

How

The renovation of existing wastewater treatment plants and additional work will allow wastewater to be used for agriculture via tertiary water treatment processes such as ultraviolet light treatment and phosphorus removal. The treatment of nitrogen and phosphorus contained in wastewater will prevent the build-up of alga and pollution in lakes, thus helping to better protect aquatic environments and reduce pressure on local biodiversity. Reusing wastewater and ensuring the water released into the natural environment of a better quality are part of the sustainable development goals. The private partner will use an Environmental and Social Management System (ESMS) to assess how the contract complies with its social and environmental responsibilities. It will incorporate current Tunisian environmental standards, in line with the World Bank's own environmental principles. The PPP is a win-win solution in terms of efficiency costs and in terms of quality in achieving the key performance indicators for wastewater sanitation services (The PPP solution is less costly by 17%).

i) Increase access to essential services and promote equity

The project will increase access to essential services and promote equity while taking into account the real needs by providing sanitation services for the benefit of approximately 960 000 residents in the south of Tunisia with around half being women and girls and these people live mainly in rural areas. The private partner is committed to carry out the services for the benefit of users under objective, transparent and nondiscriminatory conditions.

In terms of improving equity and social justice the private partner must use the services of a qualified specialist in the environmental field, social, health and safety in order to prepare ESHS specifications, in collaboration with a specialist in procurement.

The applicable policy to works should wherever possible be brief but specific and explicit, and measurable to enable reporting on compliance with applicable rules. At a minimum, the policy should contain commitments like apply international good professional practices for the protection and protection conservation of the natural environment and minimizing inevitable impacts, provide and maintain a working environment that respects health and safety and systems of safe work, protect the health and safety of local communities and users, with attention particularly for disabled, elderly or more generally vulnerable people, adopt a gender perspective and provide a framework promoting equality for men and women in participation in the planning and preparation of the Works and allowing them to benefit equally, work in a collaborative manner, including with the users ultimately of the Works, the authorities concerned, businesses and local communities and hear and listen to affected people and organizations and respond to their concerns, with particular attention to vulnerable, disabled, or elderly people. And this is monitored by the public partner. Indeed, the private partner has to develop an environnemental and social management and monitorings plans in compliance with environmental and social performance standards and applicable in Tunisia detailed the recommended actions.

Circular Economy in the context of sanitation focuses on the whole sanitation chain which includes the provision of toilets, the collection of waste, treatment and transformation into sanitation-derived products including fertiliser, fuel and clean water.
In this context the project will provide for the renovation of existing wastewater treatment plants and additional work that will allow wastewater to be used for agriculture via tertiary water treatment processes such as ultraviolet light treatment and phosphorus removal.

The Dealer is responsible for recruiting and mobilizing staff necessary for the proper functioning of the Concession Service.

Concession for Collective Wastewater Sanitation Service

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

Funding sources to support the project, including style of agreement e.g. availability payment, user pay, mixed, etc.

Style of agreement : mixed (users and ONAS): the remuneration is paid by ONAS from the revenues of conceded service and from ONAS directly.

Financial sources to support the project, debt and equity, any guarantees or contingent liabilities involved, payback terms and expectations

The private partner: The project will be financed through equities and debts.

The public partner: An escrow account is opened and will be fed through a loan for an amount of 6 months related to the private partner remuneration; a loan from the IBRD to finance works excluding value added tax (and part is assigned to the escrow account) and revenues from users collected by SONEDE on behalf of ONAS for users connected to the collective sanitation network. For the latter it has been agreed during the council of Ministers on 01/12/2021 to increase in sanitation fees by 30% in 2022 and by 11% in 2023,2024,2025 and 2026 and by 6% from 2027 to 2031. It has been agreed during the same council of Ministers to give a balance grant to ONAS for the years 2022, 2023, 2024, 2025 and 2026.

Key KPIs such as the number of years for payback, IRR, ERR, Value for Money and Public Sector Comparators when used

- The project will be beneficial, and the costs savings is about 17% while using the value for money criteria.
- The project has been awarded transparently through a tendering process and the PPP Unit and the World bank were involved during
- the process and gave their approvals.
- The contract includes the different provisions related to corruption, the commitment by the private partner to provide and maintain
- a working environment that respects health and safety, the employment and redeployment strategies according the ONAS employees and his own employees and trainings provided.
- The project will enhance the local economy through direct and indirect employment and its indirect impacts.
- Some jobs will be created by service providers (analysis laboratories, equipment maintenance, etc.) and by construction companies, etc.
- Indirect jobs are generated by the improvement of environmental performance and the resulting reduction in the environmental costs
- of polluting activities. The impact of this improvement mainly concerns sectors highly dependent on environmental quality like the tourism sector.
- Improving the environmental performance of sanitation systems has a positive impact on public health with a reduction in healthcare costs and absenteeism.

Concession for Collective Wastewater Sanitation Service

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

The project will enable the rehabilitation and upgrading of wastewater management infrastructures in Tunisia, with support for the renovation of equipment, as well as the operation and maintenance of these infrastructures which will improve the resilience of infrastructure through the project lifecycle. ONAS will receive technical support from the International Finance Corporation (IFC), the private sector arm of the World Bank Group.

The project will allow wastewater to be used for agriculture via tertiary water treatment processes such as ultraviolet light treatment and phosphorus removal.

The treatment of nitrogen and phosphorus contained in wastewater will prevent the build-up of alga and pollution in lakes, thus helping to better protect aquatic environments and reduce pressure on local biodiversity. Reusing wastewater and ensuring the water released into the natural environment is of a better quality are part of the sustainable development goals.

The project is indeed conducding an environmental and social impact assessment (ESIA). The contrat includes an Environmental and Social Action Plan (ESAP) prepared by the World Bank which may be updated periodically with the prior written consent of the World Bank and which defines the material measures and actions that the public and private partners must implement to address potentail environmental and social risks and impacts of the project, including the timetable of actions and measures, the institutional provisions, staffing, training, monitoring and reporting, and any environmental and social instrument to be prepared within this framework.

The contract also includes performance indicators which are controlled by ONAS and applies penalties for non-compliance with performance obligations .

In terms of risks, the contract has been drafted taking into consideration the different risks and their mitigation strategy especially for those affecting the communities.

Concession for Collective Wastewater Sanitation Service

Replicability

iv) Be replicable and scalable

The project is part of a whole project for collective sanitation works in the North and South of Tunisia. The contract for the south part has been already signed and the north part is nearing completion (with different private partner) . At the the same time ONAS is working on government pays project for including the design, financing, construction and operation over 20 years for a wastewater treatment plant in Hessiane to serve part of the Tunis North sector (70,000 m3/day). This future contract demonstrates the strategic orientation of ONAS to go further in the logic of outsourcing and concluding win-win PPP contracts.

The project is positively affecting other sectors such us it will allow wastewater to be used for agriculture via tertiary water treatment processes such as ultraviolet light treatment and phosphorus removal.

As of now the contract is concluded for a period of 10 years of the effective date. The duration of the contract may however be extended in accordance with and within the limits of texts applicable to ONAS and public service concession.

ONAS has a team dedicated to PPP projects . The loan from the world bank includes a capacity building program for ONAS and its team.

The Environmental and Social Action Plan (ESAP) prepared by the World Bank and which can be updated periodically with the prior written consent of the World Bank, defines the material measures and actions that the project stakeholders must implement or have implemented to address the risks and potential environmental and social impacts of the project, including the timing of actions and measures, institutional, staffing, training, monitoring and reporting arrangements (or both parties ONAS and the private partner). ONAS has to reassign staff currently managing the facilities to be delegated to the private partner according to the terms established in ESAP. The updated list of personnel assigned to the Concession Service (with mention of their status, management staff, authorized agents, etc.) has to be sent by the private partner to ONAS through an annual technical report.

v) Engage all stakeholders

There was a need to implement a more efficient organization of sanitation services taking into account the approach followed by the Council of Ministers in 2013. This is why as part of the guidelines defining the general framework of the delegation project was the relations with local authorities and users and all the stakeholders engaged.

A list of the different stakeholders engaged have been mapped and involved through a communication strategy taking into account their needs and the future relations with them. Some interviews were conducted before writing the feasabiluty study such us municipalities, the users association, the staff representatives , the general directorate of local public authorities of the Ministry of the Interior, directorate of urban hydraulics of the Ministry of Equipment, regional planning and sustainable development, the Tunisian association for the protection of nature and the environment, and two private companies operating in the environmental sector which expressed their opinions and participated freely without fear.

The contract includes provisions which deals with communication with users and third parties. The private partner ensures a permanent computer connection with the application management of ONAS operation in order to deal with requests and complaints from users and third parties.

Environmental, social, health and safety requirements must take into consideration the mechanisms for handling complaints, including the types of complaints that must be recorded and how to ensure confidentiality .

Environmental and social management and monitoring plans designate the plans developed by the private partner in compliance with Environmental and Social Performance Standards and laws and regulations applicable in Tunisia, detailing the recommended actions when environmental and social assessments as part of the preparation of the System of environmental and social management .

Public-Private Partnerships for the Sustainable Development Goals

UNECE PPP and infrastructure award 2023

Compendium of case studies

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01. Argentina	Córdoba Cluster Program
02. Brazil	Smart Goiania PPP
03. Brazil	Smart Maceio PPP
04. Brazil	Integrated Sanitation PPP
05. China	Xiaoqing River Revival Project
06. Ethiopia	Refurbishing Lithium Ion Battery and Solar Systems
07. Greece	Crete Schools PPP
08. Greece	Student Accommodation PPP
09. Kyrgyzstan	Renewable Energy Powered Data Centre
10. Qatar	Qatar Schools PPP program
11. Serbia	Disinfection, disinsection and pest control, City of Pančevo
12. Serbia	Road infrastructure PPP, Municipality of Ruma
13. Serbia	Public lighting PPP in the the City of Valjevo
14. South Africa	Sedibeng Agro-processing Hub / Fresh Produce Market
15. South Africa	Rooftop Solar PV
16. South Africa	City of Johannesburg Waste to Energy facility
17. Tunisia	Collective Water Sanitation Service in the South of Tunisia
18. Ukraine	New Multidisciplinary Hospital in Zhytomyr
19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

New Multidisciplinary Hospital in Zhytomyr

Overview

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New Multidisciplinary Hospital in Zhytomyr

Zhytomyr City, Ukraine

Project Proponent:	PPP Agency of Ukraine
Sector:	Healthcare
Public Organisation:	The Zhytomyr City Council
Estimated CapEx (USD)	USD 76,545,700 million (70 million EUR)
Stage of the project	Identification stage

Public-Private Partnerships for the Sustainable Development Goals

New Multidisciplinary Hospital in Zhytomyr

Context and Strategy

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Where

Project is located in Zhytomyr City in Ukraine. The city will provide a plot of land with a total area of approximately 6.3 hectares with an entrance and connection to communications for the construction of a new facility. This new multidisciplinary hospital will serve the entire population of Zhytomyr City which has a population of approximately 261 thousand inhabitants. It will also provide service to patients from other districts in the Zhytomyr region. More than 600 thousand electronic referrals for patient treatment are expected to be fulfilled annually This is a project in the healthcare sector

Why

The project was identified and selected for a prefeasibility study with the support of the International Finance Corporation (IFC) acting as a strategic advisor to the Government of Ukraine.

What

The new hospital will provide medical services for the diagnosis and treatment of a wide range of diseases with a centralized location of departments. Implementation of the project will make possible the decommission the old buildings of three local hospital built in the 1950s and 1970s to update medical equipment, and to significantly improve the logistics and quality of medical services for patients and community residents.

Public-Private Partnerships for the Sustainable Development Goals

New Multidisciplinary Hospital in Zhytomyr

Context and Strategy

UNECE

Who

The private partner will carry out the financing, design, construction, equipment, and further maintenance of the buildings, structures, and medical equipment of the new hospital, which consolidates two local municipal providers of medical services in one facility. The private partner will build and manage the infrastructure for the government entity. Instead of being paid by the people who use the service, they will be paid by the government from the city's budget through regular 'availability payments' after the infrastructure is up and running.

When

The estimated duration of the PPP contract is 20 to 25 years.
Start date: October 2023 (preliminary assessment began).
Tender: Planned for 2024.
Construction: 2 years for design and construction.
Operations: 18 – 23 years.

How

The Zhytomyr healthcare project contributes to the 2030 Agenda and SDGs by enhancing medical service accessibility and quality, and promoting sustainable infrastructure with energy-efficient construction.

New Multidisciplinary Hospital in Zhytomyr

Access and Equity

i) Increase access to essential services and promote equity

- Through a stakeholder engagement plan, the project will identify and consider the needs of the population, including factors such as demographics (patient's economic and social situations), epidemiology and accessibility.
- The project will expand equitable access to high-quality medical services to the entire population of Zhytomyr and to patients from other districts in the Zhytomyr region.
- The project will assess and address its potential temporary or permanent effects on existing services, with plans to mitigate any unavoidable disruptions to healthcare delivery during construction and initial operation.
- Effectiveness of the accessibility measures put in place by the project will be monitored and regulated throughout the life of the contract.
- The project aims to correct historical healthcare inequalities by creating a multidisciplinary facility that provides comprehensive medical services locally, ensuring all community members, especially the vulnerable, have equitable access to care without the need for extensive travel.

New Multidisciplinary Hospital in Zhytomyr

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

- The project commits to a corruption-free, transparent procurement process aligned with the UNECE Standard on a Zero Tolerance Approach to Corruption in PPP Procurement, as part of Ukraine's Anti-Corruption Policy.
- The project will select an experienced private partner, extensively skilled to design, build, finance, and maintain the project over its life. It will deliver ‘value-for-people’ by improving the quality and availability of medical services.
- The private partner will be paid for the availability of the facility and additional services like security and cleaning, based on performance standards, after the hospital becomes operational, covering project costs and investment returns.
- The project will generate positive VfM, specifically by:
    a. The costs net of benefits of the PPP contract selected is or will be lower vs. a modern public procurement model.
    b. The cost/benefit of the project is or will be shown to be favourable to the public party.
- The fiscal sustainability and creditworthiness of the PPP contract will be positively evaluated and managed by the Zhytomyr City Council, with transparent disclosure of budgetary impacts in the city's budget.

New Multidisciplinary Hospital in Zhytomyr

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

- The project will reduce greenhouse gas emissions in large part by being more energy-efficient/using more energy-efficient solutions during the construction and operations of the new hospital.
- Materials and technologies used to implement the Project must meet the highest quality, energy efficiency, and environmental safety standards. the private partner will calculate the annual energy consumption of the project and will develop a plan, including the identification of strategies, to improve the energy efficiency of the project/reduce consumption.
- The project will meet statutory wastewater discharge norms after treatment and will reduce water losses that are presently significant in the old hospitals slated for decommissioning.
- An Environmental and Social Impact Assessment (ESIA) will be conducted.
- The project will develop a detailed risk reduction and mitigation strategy during the preparation of the feasibility study. The community will be involved in this process.

New Multidisciplinary Hospital in Zhytomyr

Replicability

iv) Be replicable and scalable

- The project's replicable “DBFM without providing services” PPP model, emphasizing risk management and cost-efficiency in secondary medical services, sets a precedent for similar initiatives across Ukrainian cities. It enables the City to avoid upfront construction costs, making payments only post-operation, while maintaining medical service quality through municipal providers. This approach, already garnering interest in other cities, promises economies of scale and operational efficiency through consolidation.
- A template contract being developed for this project which can be replicated for other similar projects elsewhere in Ukraine.
- The project is a pilot PPP initiative in local healthcare using the Availability-based model, aimed at enhancing social infrastructure and demonstrating the potential of PPPs in healthcare. The project provides for the transfer of technologies and experience of the private sector in the design, planning, creation, effective construction, and maintenance of modern healthcare facilities.
- The PPP project introduces innovations and new technologies in Ukrainian healthcare. The private partner will apply their expertise in design and management within a multidisciplinary healthcare setting, improving service quality and equipment. Additionally, IFC-supported implementation will boost local government capacity for future PPP projects, advancing social infrastructure and efficient budget use.

New Multidisciplinary Hospital in Zhytomyr

Stakeholder Engagement

v) Engage all stakeholders

- The project has identified the community/public, patients, municipal providers of healthcare, other healthcare institutions operating in the city and region, the National Health Services of Ukraine, the Ministry of Health of Ukraine, and the Zhytomyr City Council as stakeholders.
- A stakeholder engagement plan will be developed considering the needs of each stakeholder during tis feasibility stage.
- Stakeholders will have the right to submit any comments or suggestions they consider relevant to the planned activity, without the need for justification.
- Stakeholder feedback will be incorporated into project plans, designs, and processes; it will influence project decision-making; and will be treated fairly and equitably
- Quality and pertinent information about the project will be available to all stakeholders, including the public, in a timely, understandable, and accessible fashion, and incorporated into the PPP contract.
- The project has committed to developing a process and mechanisms to manage public grievances. Both public and patient feedback will be tracked and made available, subject to personal data protection regulations, and grievances will be adequately addressed/responded to in a timely fashion.
- The project has committed to ensuring that stakeholder feedback will be incorporated into project plans, designs, and processes; that stakeholder feedback will be treated fairly and equitably.

Public-Private Partnerships for the Sustainable Development Goals

UNECE PPP and infrastructure award 2023

Compendium of case studies

UNECE

01. Argentina	Córdoba Cluster Program
02. Brazil	Smart Goiania PPP
03. Brazil	Smart Maceio PPP
04. Brazil	Integrated Sanitation PPP
05. China	Xiaoqing River Revival Project
06. Ethiopia	Refurbishing Lithium Ion Battery and Solar Systems
07. Greece	Crete Schools PPP
08. Greece	Student Accommodation PPP
09. Kyrgyzstan	Renewable Energy Powered Data Centre
10. Qatar	Qatar Schools PPP program
11. Serbia	Disinfection, disinsection and pest control, City of Pančevo
12. Serbia	Road infrastructure PPP, Municipality of Ruma
13. Serbia	Public lighting PPP in the the City of Valjevo
14. South Africa	Sedibeng Agro-processing Hub / Fresh Produce Market
15. South Africa	Rooftop Solar PV
16. South Africa	City of Johannesburg Waste to Energy facility
17. Tunisia	Collective Water Sanitation Service in the South of Tunisia
18. Ukraine	New Multidisciplinary Hospital in Zhytomyr
19. Ukraine	I [First] and container terminals in the Chornomorsk Seaport

Chornomorsk Seaport

Overview

UNECE

I [First] and container terminals in the Chornomorsk Seaport.

Ukraine

Project Proponent:	PPP Agency of Ukraine
Sector:	Transport
Public Organisation:	PPP Agency of Ukraine
Estimated CapEx (USD)	USD 38-50 million will be required to deliver the project.
Stage of the project	Development Stage. A pre-feasibility study has already been prepared by the Ministry of Infrastructure of Ukraine (MIU) with the support of the IFC, the EBRD, and a consortium of consultants led by Castalia Advisors LLC. A feasibility study and tender documentation for the project are currently under development.

Chornomorsk Seaport

Context and Strategy

UNECE

Where

The project is located on the banks of the Black Sea and the Sukhyi estuary to the southwest of Odesa and the east of Chornomorsk in the Odesa region of Ukraine. The total area of the project is approximately 30.8 hectares.

Why

The Port of Chornomorsk is one of three major deep seaports in Ukraine. Container operations at the port cannot be revived without long-term private participation for two main reasons: first, as a state-owned enterprise, the port has limited access to investment capital and limited market-oriented management experience, leading to significant competitive constraints that would be addressed by a private partner. Second, to bring back container volumes to the First and Container Terminals, port users will need to be assured of reliable, long-term performance and high-quality handling, aspects that a private partner will be well positioned to address.

What

The purpose of the project is to create a modern terminal for container transshipment and general cargo. The project envisions the reconstruction of existing facilities of the transshipment complex and updating and modernising the transshipment machinery. It involves attracting a private investor as the concessionaire to finance the design, improvements to the berths, maintenance of the first and container terminals at the seaport (berths 1-6) and operational activities.

Chornomorsk Seaport

Context and Strategy

Who

The project follows a Design-Build-Finance-Operate-Maintain (DBFOM) PPP model where the private entity is responsible for the design, construction, financing, operation, and maintenance of a project. The public sector contribution to the project is the potential transfer of the assets and 30 plots of land (19 hectares) of the First and Container Terminals (berths #1-6) to the concession.

When

Start date: May 2023.
Tender: Planned for 2024.
Construction period: Concessionaire has flexibility, but the final decision on berth transfer and scope of work will be defined in the feasibility study (under development). A 1-year period is assumed to be needed for the transfer of the property to the concession.
Operational period: 2025 (start) for 30-40 years.

How

The project aims to enhance capacity, efficiency, and service quality, draw private investment to boost operational potential and commercial flexibility, and improve the economic performance through reduced operating costs and increased revenue from taxes and fees. It also focuses on increasing the port's asset value, decreasing service costs for sea carriers, and enhancing the health, safety, and labour rights of port employees. Additionally, the project considers offering further social benefits funded by increased land rent revenues.

Chornomorsk Seaport

Access and Equity

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i) Increase access to essential services and promote equity

- This project, focused on restoring assets and operations and expanding capacity at the first and container terminal at the port through a concession agreement, will not only restore the past provision of essential services at the port but further expand them through increased capacity over time depending on commercial need.

- The groundwork has been laid to ensure continued service delivery at acceptable performance levels over the life of the project, noting that in the short term, service provision forecasts indicate that it will be unlikely that a private partner will be able to increase the existing handling of bulk and general cargo significantly above the current level. However, the stable volumes of the First Terminal will allow the investor to cover the fixed costs of the terminals and provide capital for further development as new facilities become more attractive. It is expected that in the long term, the private investor will be able to increase the efficiency of operations and improve the position of the analyzed terminals.

Chornomorsk Seaport

Economic Effectiveness and Financial Sustainability

ii) Demonstrate the economic effectiveness and financial sustainability of the project

- The project will adhere to the UNECE Standard on a Zero Tolerance Approach to Corruption in PPP Procurement (ZTC) and Ukraine's Anti-Corruption Policy.
- It is expected the port will not only be restored but improved from its original condition, thereby offering net tangible and intangible benefits to society.
- The net costs of the selected PPP contract model are expected to be lower compared to a modern public procurement model
- The cost/benefit analysis indicates that this project is favourable to the public party with no need for taxpayer funding as users of the port will pay for the service provided. The concession model effectively allocates financial and operational responsibilities, as well as supply and demand risks to the concessionaire, incentivizing swift and efficient project delivery and operation. This model is expected to generate sufficient free cash flows to cover concession payments, as evidenced by similar successful projects in Ukraine.
- The private sponsor (concessionaire) will be of adequate technical, financial, and reputational standing to successfully finance, implement, operate, and maintain the project over its life, including having access to necessary resources to fulfill its contractual obligations under various economic scenarios and to adapt the services to potentially evolving needs.
- The material risks and rewards of the PPP are or will be identified and appropriately mitigated, allocated or shared in the contract or in the underlying regulations for the PPP delivery form selected and sector.

Chornomorsk Seaport

Environmental Sustainability

iii) Develop a resilient infrastructure and improve environmental sustainability

- This project will address greenhouse gas (GHG) emissions.
- the concessionaire will develop a plan, including the identification of strategies, to improve the energy efficiency of the project/reduce consumption . General ideas related to energy-efficient materials and technologies will be provided to the concessionaire by the public party. It is assumed the concessionaire will have access to the materials and technologies they need to ensure the project is energy-efficient.
- The project will assess and potentially retrofit the stormwater system to treat water from the site, preventing contamination. It will include regular monitoring of water resources, wastewater, and sediment quality, especially during dredging and disposal, adhering to Ukraine's environmental and safety guidelines for port facilities.
- A comprehensive risk reduction and mitigation strategy will be formulated for the project, addressing response coordination, community protection, and funding for possible losses, with the involvement of stakeholders, including the public and affected communities.

Chornomorsk Seaport

Replicability

iv) Be replicable and scalable

- The project is designed for replication in Ukraine's port sector, structured around insights from past concession projects, and leverages the expertise of partners like EBRD and IFC. Aimed at enhancing port efficiency and infrastructure with new technologies and standards, it plans to employ adaptable template contracts proven in prior concessions, setting a scalable precedent for future initiatives.
- The project will create opportunities for the transfer of knowledge/know-how from the private party to the public party. Specifically, the project involves the transfer of better management experience and operations from the private partner to the public agency.
- Template contracts will be used for the PPP which can be reproduced/used by other projects.
- The project has committed to implementing innovative approaches and solutions. One of the aims of the project is to achieve balanced development and the efficient use of the Chornomorsk seaport capacity by attracting private investment under the terms of a concession and renewing assets using innovative approaches and solutions.

Chornomorsk Seaport

Stakeholder Engagement

v) Engage all stakeholders

- To date, the project has identified end users/direct customers (container lines, existing private operators); lenders, creditors, investors (including the future concessionaire), businesses located at the port, local self-governing bodies, local state administrations; trade unions and employees; and the Ministry of Infrastructure and the USPA as project stakeholders.
- A stakeholder engagement plan will be developed considering the needs of each stakeholder.
- Stakeholders will have the right to submit any comments or suggestions they consider relevant to the planned activity, without the need for justification.
- The project has committed to ensuring that stakeholder feedback will be incorporated into project plans, designs, and processes; that stakeholder feedback will be treated fairly and equitably.
- Quality and pertinent information about the project will be available to all stakeholders, including the public, in a timely, understandable, and accessible fashion, and incorporated into the PPP contract.
- The project will develop and implement a grievance mechanism as part of the stakeholder engagement plan.