

**Draft (24 April 2019)<sup>1</sup>**

## **People-first PPP Waste to Energy Guideline**

### 1. Introduction

#### 1.1 Guideline objectives

The Guideline is aimed at guiding the stakeholders of the People-first PPP waste to energy projects (the project) in the management of the projects, acquainting them with project standards, procedures and policies, and defining terms related to the project. In addition, the Guideline presents the life cycle and processes of the project, the concrete mirrors and requirements of the objectives, and principles that feature People-First policy and sustainable development.

The Guideline proposes high-level standards (hereinafter called "standards") that assist the government of host country with building, purchasing and performing the People-first PPP mode in other countries, so that the stakeholders of the project can better manage the project, so as to:

- a. maximize the economic, social and environmental benefits to achieve People-first policy and sustain the development;
- b. make the progress, quality and costs of the project controllable;
- c. involve more private corporations in the PPP model, and reduce the time and costs of the development of the People-first PPP model.

#### 1.2 Objectivity and scope

##### 1.2.1 Objectivity

"Standard" is a formal document that presents the existing specifications, methodology, processes and practice. The knowledge contained in the standards is an extraction from the "good practice" that is widely accepted by the UN People First and Sustainable Development PPP Center and people working on the PPP waste to energy project.

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<sup>1</sup> Circulated by the UNECE secretariat as received from the Project Team leader

Generally speaking, the alleged "good practice" means that the implementation of such knowledge, skills, tools and techniques may contribute to the likelihood of such a successful project. It, however, does not always mean that the practice, with no change, can be true to all projects. That requires the organization or project management team to identify what knowledge should be applied into the particular project.

The standards of the UNECE is issued to complete the UN sustainable development goals (UNSDG) by having in place the models that make possible the people first project and are of world influence. The international standards have been introduced by the state that are seeking the mainstream PPP modes, and adapted to the social and economic realities of their states and the particular legislature and judiciary. They, however, are neither compulsory nor require the "signature" of its member states in any forms. That means it is completely voluntary.<sup>2</sup>

### 1.2.2 Scope

Such a mode requires the cooperation that involves multiple stakeholders. For that reason, the Guideline includes only the project's good practice, proposals and outlines that are widely recognized.

The standards neither cover detailed analyses nor answer to any of asked questions.

## 1.3 Waste to energy

1.3.1 The solid waste covers such scrap solid and semi-solid object as are left by the humanity in its manufacturing, consumption, life living and other activities (the definitions made by other than China cover more, even including the waste left by animals). They, commonly known as "rubbish", consist of waste that is industrial, agricultural and domestic.

1.3.2 Waste to energy means recycling substances and energy from the solid waste by particular management methods and technical processes. This will accelerate the biodegradation and circulation of the substances and energy and create the techniques that promise great economic benefits. Compaction, breaking, sorting, solidification, burning

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1. <https://pppknowledgelab.org/ppp-cycle/what-ppp>

and bio-disposal are among the methods to be taken.

#### 1.4 PPP (Public-Private Partnership)

1.4.1 The term "public-private partnership"(PPP) describes such partnership forged between government departments and private sector, aiming at carrying out the infrastructure and the provision of other services. PPP, according to the definition by the World Bank, means the long-term contract for the provision of public assets or services signed by and between the government departments and private sector. Among others, the private sector is required to undertake the major risks and management responsibilities, and the pay is linked to performance.”

a. Public partners, in the PPP, shall consist of the governments, including ministries, bureaus, governmental and state-owned enterprises.

b. Private partners may be local or international ones, who shall be the corporations or investors which are equipped with the specialties in the technology or finance associated with the project. In addition, under the PPP, NGOs and CBOs are may be involved.

1.4.2 The PPP shall be framed to clarify the strengths of the governmental departments and the private sectors in performing their particular tasks.

a. A government may politically contribute to a PPP project by fund (from taxes), asset transfer, other political commitments, and physical contribution to perform its social responsibility, foster the awareness of environmental protection, and provide the local information.

b. The private sector is tasked with bringing the project to an efficient operation by using its know-how in the commerce, management, operation and innovation, and it also funds the projects contained in particular contract.

1.5 The importance of “Waste to Energy” to the concept of “People First” and “sustainable development”

1.5.1 Energy holds the key to the objectives of sustainable development. Specifically, they, by means of advanced medical care, education, water supply and industrialization as well

as climate change, significantly reduce the poverty. <sup>3</sup>

1.5.2 The inappropriate disposal of waste solid may bring serious pollution to land, water and air. Furthermore, the solid waste, by means of air, water and soil, contributes to the direct invasion of harmful substances contained in the environment into the human body via respiratory tract, alimentary canal and skin, leaving the affected people falling ill.

1.5.3 Solid waste can be harmless, reduced and helpful to reclamation and industrialization by recycling and transforming of waste and energy conversion, leading to a more friendly environment. This provides a new source of energy for humanity and promotes the UN SDGs.

1.5.4 To secure an efficient outcome, each single PPP project must take into account its particular developing conditions, including:

- a. Joint agreement and acceptance of the involvement of shareholders,
- b. The approximate size, location and future expansion of the project,
- c. Reducing potential risks in development, which shall not be taken by the public sector.

## 1.6 Functions of PPP in Waste to Energy

1.6.1 To attract private capitals' investment. Rendering the solid waste reduced and harmless is the public services that government shall offer to meet the public demand for environment. The energy-oriented and industrialized solid-waste disposal can be of private product in some way. Government is always struggling with the mounting pressure in financing in order to develop and sustain the increasing infrastructure needed by the public. The private sector involved in a PPP project is repaid by ROI via provision of services. UN SDGs involves channeling the power of public departments as much as possible. Sustainable development goals 17 (revitalizing the sustainable global partnership) call for the cooperation between governments, social and civil organizations. Such capital restructuring measures as review, structural control, legislation and award mechanism

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2. Sustainable development objectives 7, [\\_https://sustainabledevelopment.un.org/sdg7](https://sustainabledevelopment.un.org/sdg7).

3. Sustainable development objectives 17, [\\_https://sustainabledevelopment.un.org/sdg17](https://sustainabledevelopment.un.org/sdg17)

contribute to promote investment for faster sustainable development.

1.6.2 To improve efficiency so as to make better use of resources. Governments have been struggling with low operation efficiency due to the lack of good solutions to the issue presented by the capital, technologies and management methods. However, private operators that are granted access to the waste to energy project seek to maximize their profits by more investment and higher operation efficiency. The PPP mode as much as possible aligns the provision of public services by the governments and the maximized profits by the private investors. Under this mode, governments are allowed to transfer the its role in operation to the private operators while retaining and improving the duties on the process and project oversight. This may render the solid waste harmless, reduced, energy-oriented and industrialized, with improved environment, which sustains the development.

## 1.7 Scope of application

1.7.1 The Guideline contains the standards that apply to the industries associated with waste to energy and manage most of the PPP projects.

1.7.2 The standards are devoted to the management of individual PPP waste to energy projects. In addition, the Guideline is in interrelationship with the other PPP project management guidelines issued by the UN (for example, PPP standards on combination of the renewable resources of the emerging markets and developing economies into the grid).

1.7.3 The Guideline does not involve the all particulars of all themes. The Guideline applies to only individual PPP waste to energy projects and contains only the widely-recognized good project management process. The reference to other guidelines may be necessary in order to better acquaint with the management process of the PPP project (for example, PPP manual issued by ADB, and manual issued by the United Nations Economic Commission for Europe).

1.7.4 The standards do not devote a guide chapter to the anti-corruption of the waste to energy project, and the chapter shall be prepared independently by the PPP standard panel under the United Nations Economic Commission for Europe.

## 2. “People-First” PPP Waste to Energy Mode

### 2.1 Standard

The PPP waste to energy mode shall follow and perform the People-First PPP mode.

### 2.2 Definition

The United Nations Economic Commission for Europe tailors the People-First PPP mode for the UNSDGs. The People-First PPP mode means:

- a. The pronoun of the UNSDGs;
- b. People are the major beneficiary of the project among the stakeholders;
- c. Increase the utilization of the economically and socially vulnerable groups in water sources, energy, traffic and education;
- d. Promote social cohesive force and justice and oppose all discrimination in race, ethnic group, belief and culture;
- e. Commitment to improved livelihood by reduced poverty and create predictable local jobs; and
- f. Commitment to eliminating starvation and enhancing rights and interests of women.

### 2.3 Evaluating criteria

The evaluating criteria are as follows:

- a. Universality;
- b. Justice;
- c. High efficiency;
- d. Effectiveness;
- e. Sustainability;
- f. Repeatability.

### 2.4 PPP for Waste to Energy

2.4.1 The People-First PPP waste to energy project needs to ensure that:

- a. The use of the investment in the waste to energy infrastructure shall meet the UNSDGs;
- b. The waste to energy infrastructure shall be designed and constructed to guarantee its long-term operation;
- c. The infrastructure of waste to energy contributes to:

Secure economic benefits by minimizing operation costs;

Render the project environment friendly throughout its life cycle to ensue environmental benefits;

Group the stakeholder of the project into one community of shared values to ensure the social benefits and minimize the financial spending of the host state's government.

Balance the justice among a, b and c under any scenario.

2.4.2 The understanding, cooperation and support, and the community of share values of the stakeholders (e.g. governmental support and oversight, involvement of the private organizations, understanding and support of the public) of the PPP waste to energy project represent a precondition for the operation of the project throughout its operation cycle. Coordination among the stakeholders of the across-department and across-organization projects is the key to the performance of the PPP waste to energy project.

2.4.3 Such a project involves the full understanding and support of the public and NGO throughout its life cycle. Government departments or private investors shall take full into account the appeals of the public and the NGOs. To render the project environment friendly throughout the life cycle premises the efficient operation of the project.

2.4.4 A body of necessary cooperation agreements and complicated contracts feature the PPP waste to energy project. The cooperation on the projects are generally subject to contracts, which prioritize the balance among the appeals of governmental departments, private investors, the public and the NGOS. Legal agreements that come for the generalized integration of the risks in finance, legislation and operation represent an exceptional challenge to the project. All of the PPP agreements shall define:

- a. Functions and responsibilities of the parties concerned;
- b. The way in which the government departments and private investors take risks;
- c. The private investors shall be repaid in accordance with the achievement of agreed performance.

2.4.5 Such a successful project relies on not only the decisions that the host government makes, but the ways to operation and design the project. Project planning:

- a. The host state's government engages in the project from each beginning;
- b. Department regularly and completely involved in the project-including the affected locals, private investors, financiers, contractors and departments concerned;
- c. The size and influence of the whole project, and its individual subprojects.

2.4.6 The project shall be structured to take full into account the size of the project, and its major influence on the assets and responsibilities of the government department, especially on the states whose assets are subject to legislation and consumers' payment capacity. And therefore, it, allowing for the impact of the project, entails the investigation into the obligations that the state concerned may perform under the PPP mode.

2.4.7 Such a project shall take full into consideration of the supply and handling amount of the solid waste, energy output, project cost, environment and the influence on the private sector, the public and the energy users. Elaborate processes and complete plans, involving the forecast of the supply and demand of the solid waste, break-even analysis of waste to energy, and the market demand for the generated energy by the project, are required to evaluate the strength and weakness in terms of economic, environmental and social benefits.

## 2.5 Operating procedures of People-First waste to energy PPP project

The operating procedures comprise:

- a. Identification
- b. Preparation
- c. Procurement

d. Execution

e. Transfer

## 2.6 Project stakeholders

The stakeholders of People-first PPP Waste to Energy include:

a. Government department

b. Private sector

c. Financial institution

d. The public and consumer

e. Non-Governmental organization (NGO).

## 3. Project Identification

### 3.1 Project launch

People-first PPP Waste to Energy projects can be initiated by either government or private sector:

a. Initiated by government. The governmental departments, who are responsible for solid waste management and environmental protection, shall take charge of collecting potential People-first PPP Waste to Energy projects;

b. Initiated by private sector. PPP projects on waste to energy are demanding technology and comprehensive operation, and therefore, knowledgeable and experienced private sectors in technology and comprehensive operation of waste to energy are adequate to propose potential PPP projects to government departments.

### 3.2 Project selection

3.2.1 Government sectors are expected to organize a group of experts to evaluate and select potential PPP projects and determine the alternatives, furthermore, develop annual and medium-term project development plans based on their selection results.

3.2.2 The initiator of such projects included in the annual development plans shall submit

data related to the project in question as required by the government, inclusive of feasibility study report, project output statement and preliminary implementation plan submitted for new and reconstruction projects, and historical information on stock public assets, project output statement and preliminary implementation plan for stock projects.

### 3.3 Value-for-money evaluation

3.3.1 The value-for-money evaluation is designed to determine whether the government's traditional investment and operation mode should be replaced by PPP mode for the provision of public service projects. The implementation plans of PPP projects as are verified qualified through such evaluation shall be reported to the government by the project implementation agency to for approval. Those that fail to pass the verification shall be re-verified after the adjustment, with the disqualified ones after re-verification kept from the cooperation mode between government and private sectors.

3.3.2 Such evaluation shall follow the principles of authenticity, objectivity and openness. Such evaluation consists of qualitative one and quantitative one.

a. Qualitative evaluation covers such basic indexes as integration of life cycle, risk identification and distribution, performance orientation and encouraged innovation, potential competition, capacity of government agencies and bankability. PPP projects on waste to energy shall also take such requirements in the attitude of project stakeholders and people in the place of the project, environment and health, restrictions on foreign capital acquisition and participation in industrial activities, foreign exchange administration and restrictions on remittance of profits to the country.

b. Quantitative evaluation aims to determine whether the PPP mode can reduce project cost during the whole life cycle by comparing *Net Present Value* (NPV) of government's cost of PPP projects during the whole life cycle with *Public Sector Comparator* (PSC ) of the government sectors on the premise of an assumption that the output performance of PPP mode is the same as that of traditional government investment mode. In case of quantitative evaluation of PPP projects on waste to energy, full consideration shall be given to the influence on project performance imposed by production of solid waste, current disposal capacity, charge, subsidy policies and institutional arrangement.

### 3.4 Fiscal capacity assessment

3.4.1 PPP project on waste to energy shall be partly supported by fiscal revenue in operation subsidy, risk exposure, supporting investment, and so on.

3.4.2 Implemented and uninitiated projects shall be summarized annually by the governmental treasury departments on the basis of whole-life-cycle factors (like financial expenditure) to identify and measure the responsibility of fiscal expenditure from each individual project. And from this annual summary, fiscal capacity can be demonstrated and assessed to guarantee that governmental payment and subsidy will not exceed a specific proportion of the annual fiscal revenue, leading to a medium- or long-term fiscal sustainability of government.

3.4.3 Financial capacity assessment includes capacity of financial expenditure and balance of industries and fields.

a. Financial capacity assessment is designed to evaluate the influence of PPP project on current and future fiscal expenditure according to the budget expenditure responsibility of PPP projects;

b. Based on industrial and field scope of application of PPP projects, need of economic and social development, and demand for public services, industrial and fields balance assessment is designed to make PPP projects balanced in different industries and fields to prevent over-concentration in a certain industry and field.

## 4. Preparations for People-First PPP Waste to Energy Contract

### 4.1 Project implementation organization

4.1.1 As required by the local governments, it is necessary for the organization to define the responsibilities of corresponding industry management departments, public institutions, industry operating companies, or other relevant organizations. And within the authorization from government, the organization is responsible for early assessment and argumentation, implementation plan preparation, partner selection, signature of project contract, implementation and transfer of the PPP project after expiration. Usually, a PPP consulting service structure shall be employed.

4.1.2 A project leading team and work team shall be set up for project organization and implementation.

- a. The leading team shall be responsible for decision-making of major issues, high-level government communication, and overall work guidance;
- b. The project team shall be responsible for specific implementation of project companies, mainly comprised of PPP consulting service agency.

## 4.2 Due diligence

### 4.2.1 Project internal investigation

Project implementation agencies shall investigate law and policy, economy and finance, project itself and stakeholders of the project, mainly including:

- a. Government project approval and authorization certificate, preferential policies on land and taxation of the project, provisions on franchise and fees;
- b. Social and economic conditions and general development plans, municipal infrastructure construction, construction planning, existing administration system, current charging reality, and settlement and adjustment mechanism related to the project;
- c. Feasibility study report, environmental impact assessment report and preliminary design of the project, related assets formed, construction of supporting facilities, land acquisition of the project, and so on;
- d. Attitude of project's stakeholders towards the project.

### 4.2.2 Investigations on external investor

Such agencies shall contact and communicate with potential investors according to the basic project situation, current industry status and development plan and gain the information about potential investors' willingness. Furthermore, they shall analyze and study the preference, capital strength, operation capacity and project demands of investors and communicate with potential investors by carrying out research and investigations.

## 4.3 Preparation of Implementation plans

Content of project investment plan:

a. Project overview: The overview mainly includes basic information, economic and technical indicators and equity of project companies.

b. Basic framework for risk distribution: Such agencies shall take the risk of governmental management capacity, project return mechanism and market risk management capacity in accordance with the principles of risk distribution optimization, risk return equivalence and risk control to distribute project risk between the government and private capital. In principle, such commercial risks as related to design, construction, finance and operation maintenance of the project shall be taken by private sector, such ones as related to laws, policies and minimum requirements, by government, and such ones as related to force majeure, by both government and private sector.

c. PPP operation mode: PPP operation modes principally cover entrusted operation, management contract, building - operation - transfer, building – own - operation, transfer – operation - transfer and reconstruction – operation - transfer; the operation mode to be used in the project shall be defined in the implementation plans.

d. PPP deal structure: The structure includes project investment and financing structure, return mechanism, and relevant supporting arrangements; the return mechanism of the waste to energy mainly includes: user's payment (such as energy, solid waste treatment) and government subsidy.

e. PPP contract system: Such system comprises PPP project contract (franchise contract), shareholder agreement, performance contract (inclusive of engineering contract, operation service contract, product or service purchase contract), financing and insurance contracts.

f. PPP supervisory regime: Such regime mainly consists of authorization relationship, supervisory content and methods; supervisory content of projects on waste to energy. Particularly the environmental impact of the project should be fully considered.

g. PPP procurement mode: The project procurement shall be carried out in accordance with relevant rules and regulations of the host country of the project, with procurement methods including:

- a) Public bidding;
- b) Competitive negotiation;
- c) Bidding invitation;
- d) Competitive consultation;
- e) Single source purchase.

#### 4.4 Approval of implementation plans

4.4.1 Governments in host countries shall organize relevant sectors and external experts to develop an approval mechanism for PPP project to evaluate the project implementation plans from the perspective of necessity and compliance of the project construction, applicability of PPP mode, financial capacity, and rationality of price to ensure "value for money".

4.4.2 Such agencies shall submit the evaluated and approved projects to the government for review and advance the reviewed and approved ones in line with implementation plans.

### 5. Project Procurement

#### 5.1 Pre-qualification of projects

Project organizations are expected to have pre-qualification documents in place, release pre-qualification notice, invite private sectors and their cooperative financial institutions to participate in pre-qualification and verify whether projects have access to response of private sectors and achieve competition at the largest degree.

#### 5.2 Preparation of procurement documents

Project procurement documents shall include procurement invitation, competitors' instructions, qualification, credit standing and performance certificate that shall be provided by competitors, procurement mode, official written reply of authorization, implementation plan of project implementation agencies by governments, project-relevant approval documents and procurement procedures, requirements for response documentation, deadline, starting time and venue of submitting response files, amount and form of compulsively-guaranteed cash deposit, review methods, review standards,

requirements for government procurement policies, draft project contract and other legal documents.

### 5.3 Response to document review

A plan review group shall be set up for operation of PPP projects. A plan review group shall consist of representatives of project implementation agencies and approval experts, with the latter comprising at least one financial expert and one legal expert.

### 5.4 Negotiation and contract signing

5.4.1 Project implementation agencies shall establish a special negotiation team for confirmation of procurement result. A confirmation negotiation on variable details in the contract before signing the contract shall be carried out with candidate private sectors and their cooperative financial institutions by their ranking, with the first to reach an agreement chosen. Such negotiation shall not concern the nonnegotiable clauses in the contract and shall not be restarted with the private sectors whose previous negotiations have been officially terminated before.

5.4.2 Such agencies, at the conclusion of negotiation, shall sign a negotiation confirmation memorandum with selected private sectors and make the procurement results and contract texts prepared according to the procurement documents, response documents, addendum documents and negotiation confirmation memorandum public.

5.4.3 The project contracts, subject to no objections after the expiration of publicity, shall be signed by such agencies with the selected private sectors with the approval and consent of governments. Where a dedicated company is required for the project, the project company, once founded, shall re-sign project contract or sign a supplementary contract on the inherited project contract with the project implementation agencies.

## 6. Project Execution

### 6.1 Company establishment

Private sectors can legally establish project companies. Government may also legally designate relevant agencies to gain share of project companies accordingly. Such agencies shall supervise the private sectors to set up project companies promptly and in full amount

as agreed in procurement documents and project contracts.

## 6.2 Financing management

The private sectors or project companies shall be responsible for project financing. The private sectors or project companies shall carry out such works as financing plan design, organization contact, contract signing and financing delivery.

## 6.3 Performance monitoring and payment

6.3.1 Such agencies shall supervise the private sectors and project companies to perform contracted obligations and monitor indicators of project output performance on a regular basis as agreed by the project contracts. The environmental influence of construction and operation of project on waste to energy shall be monitored.

6.3.2 Government's financial sector shall perform their payment obligations as defined in the project contract in accordance with relevant regulations on budget management.

6.3.3 Such agencies shall pay or notify the government finance department to pay the private sectors or project companies promptly in full in accordance with actual performance and output specifications as agreed in the project contract.

## 6.4 Interim assessment

Such agencies shall carry out an interim assessment on the project every 3-5 years, placing emphasis on its project operation status and compliance, adaptability and rationality of the project contract, and develop countermeasures after assessing the risks of identified problems in a timely manner.

## 7. Project Transfer

### 7.1 Preparation

7.1.1 Such agencies or other representatives designated by government shall recover the project assets agreed in the project contract during project transfer. Such agencies or other institutions designated by government shall organize a work team for project transfer to confirm the transfer and compensation methods with the private sectors or project companies and develop an asset evaluation and performance testing plan in line with

project contract.

7.1.2 The agreed transfer mode, compensation form, transfer content and standard shall be defined in project contract. The transfer comes in the forms of expiration and early termination. Compensation comes in the forms of voluntary and paid compensation. Transfer content includes project assets, personnel, documents and intellectual property rights, and so on. And transfer criteria include such indexes as equipment availability and minimum serviceable life.

7.1.3 In case of paid transfer, a compensation scheme shall be agreed in the project contract. Where a compensation scheme is not agreed or agreed ambiguously, project implementation agencies shall map out a compensation scheme in the principle of *Restoring Same Economic Status*, which are subject to approval of the government prior to implementation.

7.1.4 Transfer scope:

- a. Project facility;
- b. Right of land use and its affiliations;
- c. Equipment, machine, devices, components and parts, spare parts and other movables related to project facilities;
- d. Employees for project implementation;
- e. Technology and technical information required for operation and maintenance of project facilities;
- f. Manuals, drawings, documents and data (written and electronic) related to project facilities;
- g. Other documents required for project transfer.

7.1.5 Conditions and standards for transfer.

Conditions and standards for project transfer can be divided as follows:

- a. Conditions and standards for rights. Project facilities, land and any other assets are free

of defects of right, any guarantee and other third-party rights. In case of transfer caused by early termination, such guarantee as set for unliquidated project loan in transfer shall be excluded.

b. Technical conditions and standards. The project facilities shall conform to the technical, safety and environmental standards agreed by both parties and shall be in good operating condition.

### 7.3 Asset evaluation

The work team for project transfer shall commission qualified asset appraisal agencies to assess the transferred in line with the evaluation methods agreed in the project contract, which can be the basis for determining the compensation amount.

### 7.4 Performance testing

7.4.1 The project assets, leading up to transfer of PPP project, shall be assessed and tested to determine whether the delivery conditions and standards agreed in the contract are met. Assessment and test above shall be conducted by independent expert entrusted by the government or the transfer work team constituted by the government and the project company. The work team for project transfer shall carry out a performance test on the transferred assets in accordance with the performance testing scheme and transfer standards.

7.4.2 Where the project, once evaluated and tested, fails to meet the agreed transfer conditions and standards, the government reserves the rights to take transfer maintenance guarantee and require the project companies to carry out corresponding recovery repair, updating and resetting of project facilities so as to ensure the transfer of the project as required.

### 7.5 Asset delivery

Private sectors or project companies shall transfer the project assets, intellectual property and technical legal documents meeting the performance test requirements, together with the asset list, to the project implementation agencies or other institutions designated by the government, with the transfer procedures of legal ownership and management right settled as required. The private sectors or project companies shall cooperate with transition of

project operation.

## 7.6 Performance evaluation

At the conclusion of project transfer, the host government is expected to organize relevant departments to conduct performance evaluation on project output, cost effectiveness, regulatory efficacy, sustainability, PPP mode application, and make public evaluation results as regulated.

## 8. Technical, Environmental and Social Management Standards for People-First PPP Waste to Energy

### 8.1 Standards

8.1.1 PPP projects on waste to energy are sensitive to environment and society. Development and private sectors are required to collaborate with each other to ensure the people-first principle and sustainable development.

8.1.2 The design, implementation and operation of PPP projects on waste to energy must fully follow host country's domestic environmental and social protection laws, and the latest international environmental standards are always recommended. Where these laws are not provided with the same legal protection as international best practice standards, PPP projects on waste to energy shall at least follow standards above.<sup>4</sup>

8.1.3 Coping with environmental and social risks is not only the benefit of sustainable development, but a core prerequisite for feasibility and successful operation of projects. If the developers and investors of PPP projects on waste to energy fails to comply with the requirements of people-first principle and sustainable development, such projects will suffer major risks and conflicts, which may lead to financial collapse or the interruption of operation

### 8.2 Selection of Technology

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4. For example, Standard of IFC on Environmental and Social Impact (2012), EU emission standards: EU Standards for the Emission of Waste Incineration Pollutants DIRECTIVE\_2000.

8.2.1 Full consideration shall be given to the advancement, feasibility and economy of the technology in design, implementation and operation of PPP projects on waste to energy.

8.2.2 The impact of PPP projects on waste to energy on ecological environment, resource recycling and public health shall be fully considered in technological options.

8.2.3 Relevant government departments shall define technical standards and specifications for PPP projects on waste to energy. And if the local environmental and social law fails to provide such protection level same as that for international environment and social sustainable development guidelines and best cases. the host governments are encouraged to develop their relevant standards and specifications by referring to international standards or simply implement international standards.

8.2.4 The technology for waste to energy largely consists of:

The main ways of waste to energy are power generation, heat supply, gas supply and fuel. Specific technologies include:

- a. Generating electricity through refuse incineration;
- b. Power generation by biomass;
- c. Energy conversion of marsh gas and sludge, and so on.

### 8.3 Environmental and social standards

8.3.1 Projects on waste to energy, once a PPP mode adopted, shall be complete with following environmental and social sustainable development characteristics:

- a. Policy managing partners focus on environmental and social influences;
- b. Identifying and assessing the above impact process;
- c. Develop a set of project management plans, including mitigation measures to address the impact throughout the project cycle;
- d. Communication with people affected by the project, especially projects concerning demolition and relocation, and work out a complaint mechanism for difficult issues.

8.3.2 The possible effects of PPP projects on waste to energy on environment shall be

analyzed, forecast and evaluated and countermeasures and measures to prevent or mitigate adverse environmental impacts shall be worked out, furthermore, the environmental impact of project construction, implementation and operation shall be tracked and monitored. Environmental impact assessment includes:

- a. Assessment on current environmental effects;
- b. Environmental prediction and assessment;
- c. Tracking assessment.

8.3.3 Investors of PPP projects on waste to energy must to avoid or mitigate, at all costs, the potential irreversible effects on air, water, soil, biodiversity, natural habitats and conservation areas to minimize damage to the ecological environment imposed by the projects.

8.3.4 The monitoring and evaluation information of the environmental impact of PPP projects on waste to energy shall be made available to the public in real time.

8.3.4 Gender ratio shall be taken into consideration for an improved fair, just, safe and male-female balanced partnership.

8.3.5 Long-term local job opportunities and skills training shall be explored and created as much as possible. Once jobs are created, health, safety and international labor standards must be observed.

## 9. Risk and Risk Sharing of People-first PPP Projects on Waste to Energy

### 9.1 Standards

9.1.1 Risk of each project shall be undertaken by the party who can control/mitigate such risk. Such agencies shall take government risk management capacity, project return mechanism and market risk management capacity in accordance with the principles of risk distribution optimization, risk return equivalence and risk control to distribute project risk between the government and private sector.

9.1.2 In principle, such commercial risks as related to design, construction, finance and operation maintenance of the project shall be taken by private sector, such ones as related

to laws, policies and minimum requirements, by government, and such ones as related to force majeure, by both government and private sector. Design of risk sharing principles is a challenge for host governments, especially when these risks are difficult to be controlled by government itself, for example:

- a. Foreign exchange risk;
- b. Political risks of force majeure, as war, civil strife, terrorist attack, currency convertibility, etc. These are not directly under the control of the host government.

9.1.3 PPP project on waste to energy is more vulnerable to public opposition, which can be fixed by the beefed-up cooperation between the government and private sector in capital, promising the scheduled construction, performance and operation of the project. To that end, we must to intensify promotion and communication and comply with the legislation issued by the host state in the construction, performance and operation.

9.1.4 Try to cope with the actual and potential risks to secure the development of PPP waste to energy projects and the improvement in financial conditions.

## 9.2 Proposal scheme for risk sharing

### 9.2.1 Government:

- a. Delayed governmental approval
- b. Government policies
- c. Government credit
- d. Governmental intervention
- e. Withdraw/nationalization
- f. Defective supporting infrastructure
- g. Land

### 9.2.2 Investors:

- a. Inadequate investor

- b. stock equity change
- c. Financing
- d. Design
- e. Project completion
- f. Operation

9.2.3 Risks shared by governments and private sector consist of:

- a. Public opposition
- b. Inadequate legal framework
- c. Concession agreement to be improved
- d. Interest rate
- e. Inflation

## 10. Project financing

### 10.1 Standards

10.1.1 The creditors shall engage in the negotiations with the investors, host state and contractors on the project. In case of the involvement of international creditors and multilateral development banks in the financing of a particular project or renewable resource PPP project, the government of the host state shall additionally take into account these requirements of the creditors, like purchase regulations, standards on sustainable environmental and social development.

### 10.2 Characteristics

10.2.1 Disproportionate share of contribution (or financing) by private sector. Generally, local governments contribute at a particular proportion (5-20%) of the project capital (20-25% of total project investment), and the rest (including the capital by stock equity and creditor's right, normally over 95% of the total investment) shall be self-invested or financed by the private investor.

10.2.2 Whole-life-cycle financing. Currently, PPP waste to energy projects has a lengthy term spanning 15-30 years, in which, financing instrument need to go through the whole life cycle of the project. This involves not only equity financing at the company level, but the financing by creditor's right for the construction of the established project. Furthermore, the operation calls for the financing by asset securitization and asset-backed notes, and the withdrawal requires the loans for merger and acquisition (Of course, at present the withdrawal of private capital deeply relies on the re-purchase by the government).

10.2.3 All-round financing. For the company involved in the project, PPP waste to energy financing generally consists of equality, creditor's right and a combination of the two above.

10.2.4 The project financing in emerging markets and developing economies is more likely to need the local government's funding and enhanced contract. We shall encourage funding the local currently- contracted projects by means of currency financing to make the PPP projects more economically feasible and sustainable.

### 10.3 Financing mode

#### 10.3.1 Major financing modes:

- a. PPP industrial fund;
- b. Bond;
- c. Bank;
- d. Asset management plan: including securities trader, fund, insurance and trust plan;
- e. Other financing instruments: consist in asset securitization, financing lease, direct financing of capital market and merger and acquisition, policy financing instruments and other such ones.

10.3.2 Such factors as governmental financial strength, governmental investment platform strength, private capital strength and credit rating, type of PPP mode, governmental subsidies, and return on investment shall be taken into account when determining the financing structure and form for the project.

10.3.3 The project financing involves the know-how and experience of professional

advisory bodies in the field.

#### 10.4 Governmental regulation

10.4.1 The host state government and regulators shall bring the financing project under its supervision. This is to ensure that the investor and the creditor are technically and managerial adequate for the implementation of their own obligations throughout the construction of the project.

10.4.2 The host state government needs to extend adequate support to the project's financing and operation. That means implementing its own responsibility for payment under the provisions of the project performance and the responsibility of government over payment. Having in place relevant law framework as a means to beef up the constraint on the governmental payment responsibility for the due interests of the private capital involved in the project.

#### 11. People-first PPP Waste to Energy Contract

##### 11.1 Standards

11.1.1 The project, in determination of the contract type, entails the consideration of such factors as charge pricing mechanism, income from investment, general framework for risk allocation, demand for financing, demand for reorganization and expansion, expiry handling, and stock assets and additional assets of the project. This is to sustain the operation of the project.

11.1.2 The Contract largely consists of the multiple sub-contracts for:

- a. Service;
- b. Management;
- c. Franchise;
- d. Build – operate - transfer (BOT) and similar arrangements;
- e. Mixed arrangement.

##### 11.2 Service contract

11.2.1 Under the service contract, governments (government departments) engage private-owned corporations or entities to complete one or multiple particular tasks, like the ongoing operation and management of water to energy, generally with a term spanning 1-3 years.

11.2.2 Government departments remain the major infrastructure service offer, with a tiny part of which subcontracted to private partners.

11.2.3 The private partners must, as agreed, offer the services, which generally shall meet the standards issued by government departments.

11.2.4 Governments, regularly by means of competitive bidding, seek the conclusion of service contracts, which feature not-long terms and small scopes. And the bidding in question is normally effective.

11.2.5 Under the service contract, such down-payment for the previously agreed service like waste disposal fee and energy charges as is made by governments to private partners shall be made in unit cost or otherwise.

11.2.6 Service contracts generally most apply to the following cases: such service items defined in the contract is adequate to identify the demand levels and make possible the real-time oversight over the performance. Service contracts may have a rapid and significant impact on the system operation and efficiency and serve as a carrier for the enhanced capacity for technical transfer and management.

### 11.3 Management contract

11.3.1 Such contracts may expand the subtracted services to part or the whole of the management and operation of the public facilities dedicated to waste to energy. Despite the government as the final service provider, the daily management and control has been delegated to private partners or contractors.

11.3.2 In most cases, private partners fund operation rather than investment. Private contractors are paid as agreed labor costs and other operational costs, like costs for disposal of solid waste. Contractors are paid additionally when completing the set objectives as an incentive for a higher efficiency by contractors. In addition, contractors under the management contract may share some of profits.

11.3.3 Government departments are the major capital investors, particularly for the investment in system expansion or significant improvement. Separation activities funded by the private sector may be defined in the contract.

11.3.4 Private partners interact with their users by selling energy, and government departments are tasked with the formulation of charges.

#### 11.4 Franchise

11.4.1 With the franchise, private operators (assignees) are allowed to offer the public service of waste to energy in the designated area, including operation, maintenance, charging, management, construction and repair. Operators shall fund all capital investment.

11.4.2 Government departments shall formulate and enact implementation standards like emission of water to energy and ensure that the assignees to meet the standards in question. As necessary, Government departments may carry out the capital investment, like disposal costs of solid waste, and by means of investment "subsidies" (fill up the capital gap), to make the franchise contract feasible commercially.

11.4.3 The assignees directly charge the system users, like disposal cost of solid waste, and sell energy to consumers. Under this contract, charges are generally specified and are to subject to change from time to time. The assignees shall raise money for capital investment in the system building, upgrade, or expansion, and finance for the investment by their own resources and expenses paid by their users. The assignees shall fund the operation.

11.4.4 Franchise is generally effective for 25-30 years.

#### 11.5 Build – operate - transfer (BOT) and similar arrangements

11.5.1 BOT and similar arrangements represent a special franchise contract. Under the franchise, private-owned corporations or organizations shall, in accordance with the implementation standards worked out by the governments, finance for new facilities or import part of which devoted to waste to energy.

11.5.2 Subject to BOT contracts, private capital providers shall fund the project construction. Importantly, with the time limits contained in the contract, private operators, as the owners of the project assets, may charge the uses of the waste to energy system like

disposal costs of the waste, and sell energy to consumers.

11.5.3 Public organs and private operators may negotiate with each other about the project output like the amount of solid waste disposal and the minimum purchase of energy, so that the operators may recover their costs during the operation term. In case of overestimated demand by the organs in question, problems will arise when they spot that their output is less than the minimum amount (take-or-pay). As an alternative, the implementation organ of the project may pay part of output construction costs and consumption expenses, leaving the risk of demand shared by public organs and private operators.

11.5.4 BOT contracts generally entail the formulation of more complicated financing schemes for a large amount of capital and longer repayment periods. Government organs extend support like guarantee for the project financing.

11.5.5 Upon the expiry of the contract, despite the ownership of the project at the hand of the public departments, they may subcontract the operation to the developer, or sign new contracts with new partners.

11.5.6 BOT comes in multiples forms, consisting in:

- a. Build-transfer-operation (BTO): transfer the project to the public organs after the construction completed rather than the expiry of the contract;
- b. Build-own-operation (BOO): under this mode, projects are developed and operated by developers, with no ownership transferred to public organs;
- c. Design-build-operation (DBO) contract: under such contracts, ownership is never of private sector, and the design, construction and operation of the project is subcontracted by only contracts;
- d. Design-build-finance-operation (DBFO): under this mode, the responsibilities for DBFO are all transferred to private partners.

11.6 Mixed mode

11.6.1 Integrating multiple types of contract with distinct features into the same contract is mixed mode, in which the properties that perfectly apply to the requirements and operation

conditions of a particular project are concentrated. Such a mode may provide tailored solutions to scope, risk allocation and/or the scope matching a particular project.

## 12 People-First PPP mode in Waste to Energy in developing country

### 12.1 The expansion in developing country

12.1.1 The private sector, as the investor and operator of the infrastructure project, engages in the public utilities, which has been a trend in developing nations. From 1990 to 2012, the investment by the developing countries in PPP projects raised to 200 billion U.S. dollars from 68 million U.S. dollars. In terms of region, East Asia, Pacific, and South Asia are seeing fast-growing PPP projects.

12.1.2 The developing states, in terms of the projects, are struggling with relative backward infrastructure, technology, economy and governance of government.

12.1.3 Such PPP projects may help the developing states with poverty reduction, crack down on employment discrimination for more equal access to employment and sustainable development.

### 12.2 People first

#### 12.2.1 The fight against poverty

The private sector has been deemed as one of the sources for professional skills, efficiency and capital, all of which are imperative for improved and expanded services, and also deficient for the public department. Among a body of cases, the private sector can benefit consumers by cooperation with the public organs. Many of private operators fail or are not willing to offer additional services to the low-income group (LIGs). And such services sometimes are not available for the group in poverty, which will remain unchanged in a short or medium term. There is no incentive for private operators to expand the services to the group, which is the potential reason for the case, but the root cause is the smaller profits by excessively high costs resulting from the absence of governmental payment convention, low consumption, and lower consumption structure.

The concerns among consumers, NGOs and civil society organizations has prompted fresh and more targeted solutions for the demand of the group, among others, BOA is most

typical. Of course, there are also other solutions to poverty reduction by projects using PPP procedures or general forms. In case of a combination of this method used to ease the limitation on services, a PPP project can stimulate adequately the private sector to offer service to the group, alongside the balanced fiscal and social risks, benefiting all stakeholders.

The low-cost mechanism, pricing structure featuring users' payment, available low-cost financing means for expanding project system and other contract systems that apply to the group shall be taken into account in order to encourage operators to offer services to the group by the PPP project.

A well-arranged PPP project may be better cater to the demand of the group for services in many ways, including well-designed contract terms or contents and adjustment of the overall reform scheme.

a. Reform framework. The commitments to the group shall be clear and enhanced, and a consensus shall be reached in the determination of the group. That means designating a body to determine the group, and the body in poverty shall oversee the services received by the group.

b. Financial considerations. Governments, in accordance with the cost recovery objectives of the PPP project, must re-assess their policies on subsidies.

c. PPP contract. A PPP contract shall be flexible enough to provide services matching the payment capacity of the group, and can be improved. The technical and construction standards are moderate, but with less costs. The group's potential of making material contributions by their labor shall be also considered.

d. Bidding procedures for PPP projects. In case of provision of services to the group, the tenderers may require the access to credible data of the group or on-site investigation. Tenderers shall have the experience for the service provision to the group, and expound the strategies they will take under the current PPP contract.

#### 12.2.2 Reduce employment discrimination and promote fair employment.

Waste to energy projects is vulnerable to public opposition due to a social phenomenon

named Not In My Back Yard. There should be early communications and regular dialogs among governments, labor unions, staff with public organs and residents in order to determine the objectives and strategies of the PPP project, which are widely accepted. We shall share the information related to staff to remove suspicion and groundless concerns. The staff shall be treated equally and offered jobs in new corporations, or they shall be granted reasonable redundancy fee. Legal assessments are vital for the solutions to staff problems related to PPP, including legislation on public services, those applying to particular departments and corporations, collective negotiation agreements and the precedents made by other departments.

- a. In opposite to sexism and racism for more fair access to employment.
- b. Redundancy or redundancy fee. This will include the bases for redundancy, and the access to a startup. The staff with the public service bodies shall be informed that they are transferred or otherwise to a new entity (this may lead to the disqualification for redundancy fee), and all staff have access to the fee in question and relocation, or this perk is only limited to particular staff members. Employment terms in a startup. Staff additionally need to acquaint with employment terms, including wage, post, perk, security of tenure, and the transfer or otherwise of accumulated pensions and benefits.
- c. Re-training. No matter a staff member continues to work or fired, the member in question shall have access to re-training programs. That means working out and putting into force training plans devoted to laid-off staff by allowing the division of some of jobs, and the ways to improve the capacity for staff detention are almost follow the local labor laws and practice. There is a need to sort out the provisions of the relevant laws before seeking a solution, or otherwise a body of speculation will arise. The staff representatives shall be introduced for the solutions as early as possible, with the information disclosed.

### 12.2.3 Sustainable Development

The life cycle and related processes of such projects shall take full into account the objectives and principles that are People-First and sustainable development in the project.

- a. Application of the waste to energy technology in developing countries.

b. Formulating and enacted waste to energy emission standards and administration specifications by reference to the standards and specifications of such kind and in accordance with the realities of the countries where such projects are carried out.

c. The environmental oversight actions and award and punishment system throughout the process shall be agreed in the PPP contract.

d. Beefing up the throughout oversight over the project's operation by governments, private investors and the public.

### 12.3 Experience from existing projects

#### 12.3.1 Improve governmental governance.

The confidence of the private sector in investment is enhancing alongside the improving governmental governance. To have in place relevant oversight mechanisms to put the governmental behavior under constraints so that they show respect for contract and comply with rules.

#### 12.3.2 Control risk of governmental credibility.

Governmental credibility constitutes the most important risk. Driven by short-term interests, the governments of developing states are prone to attract private capital by excessively high ROIs, charges and lengthy franchise terms. This practice, however, ends up prompting credibility risk due to the insufficient bearing capacity of the public organs. Initiating waste-energy projects requires the enhanced evaluation of the price to value of the project and the bearing capacity of the government, and the performance and operation of the project demand that government should perform its obligations under the PPP contract for a lower risk of governmental contract breach, which mainly include:

a. Governments may make commitments to prevention of similar competition, fiscal subsidies and provision of supporting facilities.

b. Where the government fail to perform the obligations contained in the franchise contract or the performance in question are not in line with the stipulations of the contract, remedies or damages shall be made alongside the continued performance of the contract.

c. Governments shall strictly perform the relevant obligation contained in the contract to facilitate and extend support to franchisees, and the performance of the franchise contract shall not be affected by the adjusted administrative areas, changes in government, department and in person in charge.

### 12.3.3 Improve governmental oversight.

The effective governmental oversight over such waste to energy projects is of great importance for the people first objectives. To re-examination of the oversight and policy arrangements is crucial to a successful PPP waste to energy project. Favorable legislation, oversight and policy climate is vital to sustain the PPP project, and the legislation environment that in favor of the private involvement in the public sectors represent the minimum conditions. The legislation shall minimize corruption, and sufficiently credible to encourage private involvement and investment. In face of uncertain legislation and judicial environment, investors and parties engaging in the project can be aware of the unpredictability and high risks that the project carries.

a. The improvement in the assessment system in force of the governmental oversight and legislation framework should benefit the PPP waste to energy project.

b. To incorporate the oversight rules into the contract confines the external oversight powers to the efficient oversight and performance audit.

c. The responsibility, performance objectives, charge levels and structure, charge adjustment rules and procedures of the parties to the contract shall be specified in the contract, which facilitates the forecast profitability of the project, and helps to decide it is worth the bidding or otherwise. The minimum requirements are the match between the required services and incurred costs, alongside the formulation of incentive measures for improved efficiency.

d. A regulator shall be also in place. This may demand an independent regulator in place (this body may be under some government department) or other forms of regulation.