People First PPPs for the United Nations Sustainable Development Goals



Project:	INTEGRATED WASTE WATER TREATMENT TO BIO ENERGY AND ORGANIC FERTILIZER
Project Organization	ANGLO EURO DEVELOPERS (S) LTD

Public Organization: PPP DIRECTORATE MINISTRY OF FINANCE HOST COUNTRY

Private Organization: Anglo Euro Developers (S) Ltd

Capital Providers: Private Investors with support from Multilateral Development Agencies &

Commercial Banks

SALIENT FEATURES OF PROJECT:

A patented solution for waste water & bio-energy production accepting:

- ♦ All types of biological waste
- ♦ All types of livestock & poultry manure
- ♦ All kinds of sewage and industrial waste water
- ♦ Purify waste water into at least 60 90% of clarified water and 10 40% fertilizer
- ♦ Process from 2,000 20,000 m³ of waste water per day (easily scalable)
- ♦ Generate electrical power output of approx. 8 20kW (60,000 170,000 kWh per year]
- ◆ Provide heat output of up to 80,000 kWh per year
- ♦ Improve biogas quality by capturing CO2 that can be sold to local gas networks (example CNG)



Our projects have a direct impact on most of the SDGs.
Job Creation (No 8)
Poverty Eradication
(1) Improving Quality of Life (2,3,4) Clean Energy, Climate
Action (6,7,9,13 & 15) and PPP impacts on SDG 16 & 17





People First PPPs for the United Nations Sustainable Development Goals

- ◆For Low and middle Income Countries Waste to Bio Energy projects have widespread direct impacts on UN SDGs from Poverty Eradication (1), Clean Water and Sanitation (6), Affordable and Clean Energy (7), Job Creation (8) Industry Innovation, (9) Sustainable Communities (11), Responsible Consumption & Production (12) and Climate Action (13).
- ◆Under PPP frame-work, foreign investment policies and regulations must be in place including provision of Government Guarantees for PPP projects. This is necessary to attract foreign investments for much needed infrastructure projects.





BACKGROUND AND STRATEGY SUPPORTING THE PROJECT



Proven technology with 10 plants in China utilizing our technology. Other markets include Indonesia, Myanmar (post sanction economy), and Central Europe. Countries in One Belt One Road have shown interest and initiative under PPP structure.



- 1. Low income countries will benefit most in adopting sustainable policies and projects with direct impact and contribution to SDGs.
- 2. In such economies, Private Sectors are still developing, with a few local prominent companies. From risk mitigation viewpoint PPP is a viable approach for international investors. Localized counter party risks are issues to be addressed for proposed projects to be bankable.



- 1. In addition to job creation, Biogas Energy and Renewable Solutions, provides transfer of technology in clean energy generation promoting Climate Action. Low income countries needs to promote a growing middle income population to foster internal economic growth.
- 2. Economic and legal structures, institutional governance and regulations, industrial and financial innovations have to be in place to attract foreign investments.



Ministry of Finance, Ministry of Law and Government Planning Agencies, along with Provincial / State Governments have to be involved to provide the support for legal, investments and project appraisal and selection framework. In most Emerging Markets and Developing Economies, the Public sector is in urgent need for capacity building and Private partners like ourselves can play a much needed role in promoting PPP awareness and project implementation. PPP Courses are available such as CP3P- Certified Professional PPP course which is an innovation of the World Bank Group (WBG), Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Inter-American Development Bank (IDB), the Islamic Development Bank (ISDB), and the Multilateral Investment Fund (MIF).



Waste Water Treatment Plants currently running well utilizing our Waste to Energy technology. For low and middle income countries Review of regulation under Public Debt Management Law must be in place before Government can issue Guarantees for PPP Projects.





A) FOR ESSENTIAL SERVICES AND TO PROMOTE EQUITY.

A1. INTEGRATED WASTE WATER TREATMENT & BIOGAS ENERGY PLANT

Patented German technology 2013, Waste Water Treatment built capacity ranges from 8,000 to 100,000 m3 designed to comply with German industrial WW standards and regulations. Well over 10 plants in full commercial operation in China since 2006

Integrated Solution: Waste Water Treatment + Biogas Energy Production Enhanced energy efficiency, Increased biogas yield and energy production (+30 to 50% or more) Greatly reduced WW discharge (from 10% to 40%) Fertilizer sales: Adds new and potentially significant revenue stream Potential benefits from carbon offsets. Zero Carbon emissions (CO2)

Direct Impact on SDGs 9 Industry, Innovation, Infrastructure, SDG 7 Affordable Clean Energy, SDG 6 Clean Water Sanitation, SDG 12 Responsible Consumption and Production.





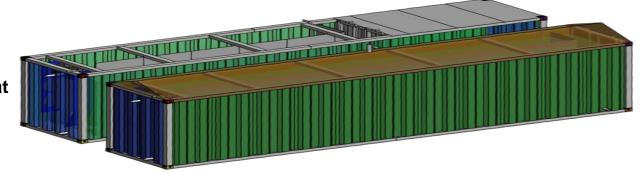
B) PROJECT RESILIENT INFRASTRUCTURE AND ENVIRONMENTAL SUSTAINABILITY

INTEGRATED WASTE WATER TREATMENT & BIOGAS ENERGY PLANT

Can be modular or large-scale configuration. Modular units use 40 ft. Containers
Tailored design for large-scale units (e.g., 200,000 m3 per day)
Containers incorporate durable stainless steel fabrication
Movable/portable
Suitable for remote/off-grid locations
Modular design significantly reduces construction cost
Minimum lifespan of 20 years for each installation (using stainless steel fabrication)
Containerized design means plant can be located closer to sources of waste, resulting in reduced transportation and storage costs.
Innovative & robust technology significantly reduces operation and maintenance (O&M) cost

ENVIRONMENT IMPACT

Ц	Zero Carbon Emissions (CO2)
	Production of biologically valuable Fertilizer
	Sale or owner-use of the generated Electrical Energy & Hea



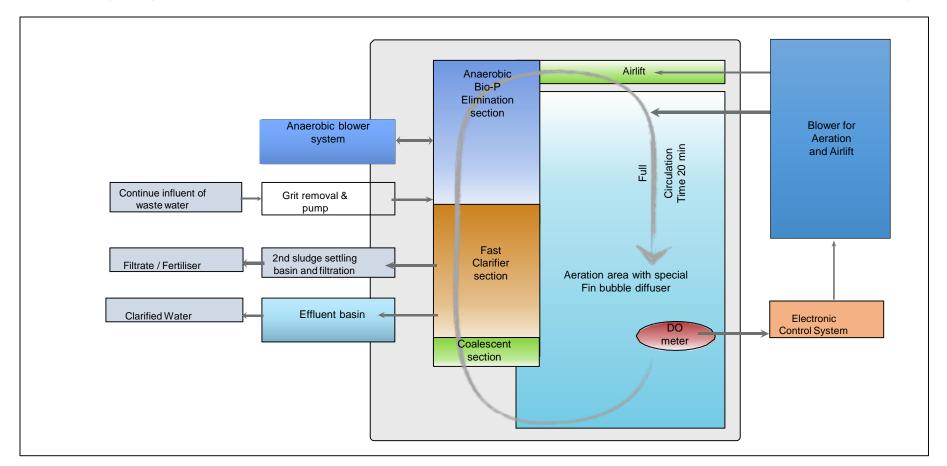
People First PPPs for the United Nations Sustainable Development Goals



INTEGRATED WASTE WATER TREATMENT & BIOGAS ENERGY SOLUTION

Flow Diagram: Waste Water Treatment Plant

Illustrating single ('all-in-one') basin water treatment & anaerobic bio-Phosphorous removal technology







Plants in China currently using the Company's single basin waste water treatment technology







C) BIOGAS ENERGY PLANT ECONOMIC AND FINANCIAL EFFECTIVENESS

DEBT 70%

Project Funding from Multilateral Development & Commercial Banks

Mezzanine

EQUITY 30%Equity by Private Investors

Based on Waste Water Affluent of 3,500 m3 per day.

Payback Period 3.5 years

IRR 24% pa

RoE 14% pa

Note: Including return from Biogas Energy sales (150,000 kW/day) and Organic Fertiliser sales (200 MT/day).

Guarantees shall be provided by Government for approved PPP Projects.

Availability Payments shall be from Government through Multilateral Development Bank loans and Credit and Commercial Bank syndicated loans.

Contingent Liabilities are covered by underwriting of Risk mainly construction risks.

Project Contribution to local economy is the Sales of Biogas Energy as clean energy to local authorities and Organic Fertilizer sales, which is locally produced. This benefits local farmers and contributes to local economy and at the same time Biomass Projects impact directly on SDG 7 Clean Energy, SDG 9 Industry and Innovation and SDG 12 Responsible Production.



People First PPPs for the United Nations Sustainable Development Goals

D) BE REPLICABLE AND SCALABLE

	Modular design facilitates scalability and replicable in other locations or country.
	Units can be combined to make an integrated waste/waste water treatment & power plant
	Decentralized design of modular plants reduces demand on electrical networks
	Excess power can be sold to private clients or the grid
	Energy self-sufficient (can be operated fully off-grid)
]	Potentially significant revenue from surplus energy (electricity or gas) sales

HUMAN CAPITAL DEVELOPMENT

╝	Anglo Euro Developers Specialist Team shall train local workers and employees at site including operations
	and maintenance. This includes Public operations and management teams.
	There shall be transfer of skills and know-how to local workers in order to upgrade their vocational skills.
	Project/Asset Development and Management
	Training shall be given at different phases of the Project, pre-construction training and safety induction,
	on-site training on construction and assembly, ISO standards, work to order, and post construction training.
]	Operations & Maintenance Training and Skill Upgrading.

People First PPPs for the United Nations Sustainable Development Goals



PROJECT PHASE

TASKS

IDENTIFYING PROJECTS AND SCREENING AS A PPP APPRAISING AND PREPARING THE PROJECT CONTRACT

STRUCTURING AND DRAFTING TENDER & CONTRACT

TENDER & AWARD MANAGING
CONTRACTDEVELOPING &
COMMISSIONING

MANAGING
CONTRACTOPERATING,
MAINTAINING
AND
HANDING BACK

E) THE PPP PROCESS – MAIN STAGES

 IDENTIFY / SELECT PROJECT SOLUTION

ASSESSING
 ECONOMICALLY THE
 PROJECT (SOCIAL ECONOMIC
 ASSESSMENT BY
 CBA IN SOME
 COUNTRIES)

SCOPING THE PPP
PROJECT

SCREENING
PROJECT AS PPP
AND PRE-ASSESSING
FINANCIALLY

REFINE PROJECT
SCOPE AND PREDESIGN (DETAILED
PROJECT OUTLINE OR
PRE-LIMINARY DESIGN)
TEST TECHNICAL
FEASIBILITY AND
ASSESSES
ENVIRONMENTAL

IMPACT
REFINE SOCIO
ECONOMIC FEASIBILITY
/ ASSESSMENT
(CONDUCT FUL CBA IN
SOME COUNTRIES)

ASSESS PPP
COMMERCIAL
FEASIBILITY AND
SOUND THE MARKET
PSC ANALYSIS (IN
SOME COUNTRIES) AND
PPP AFFORDABILITY

PPP AFFORDABILITY

PREPARATION AND
DUE DILIGENCE
(ASSESS RISKS AND
CONDUCT DUE
DIIIGGENCE) PRESTRUCTURING

 DEFINE POCUREMENT ROUTE AND PLAN DEFINE FINAL
 STRUCTURE OF PROJECT
 (FINANCIAL, RISK,
 PAYMENT MECHANISM)
 FINALISE DUE DILIGENCE
 AND PREPARATION
 (PENDING ISSUES)

RESSESS OR CONFIRM
PREVIOUS ANALYSIS IF
NEEDED (ECONOMIC,
FINANCIAL /
COMMERCIAL, PSC AND
AFFORDABILITY)

FINALISING REFERENCE
DESIGN, TECHNICAL
REQUIREMENTS AND
OUTPUT SPECS

DEFINE OTHER BUSINESS
TERMS AND CONTRACT
STRUCTURE MATTERS
(ESPECIALLY
IMPLEMENTING
CONTRACT MANAGEMENT
STRATEGY AND TOOLS)

STRUCTURING AND
 DRAFTING RFQ* DEFINE
 QUALIFICATION CRITERIA

 STRUCTURING AND DRAFTING RFP: DEFINE PROPOSAL REQUIREMENTS AND EVALUATION CITERIA

EVALUATION CITERIA
 FINALISE CONTRACT
 DRAFT

 LAUNCHING THE TENDER

QUALIFY BIDDERSISSUE CLARIFICATIONS

ISSUE CLARIFICATION
 DIALOGUE, INTERACT
OR NEGOTIATE
CONTRACT – IN
INTERACTIVE
PROCESSES

 CLOSE RFP AND CONTRACT IN INVITE TO PROPOSE - IN INTERACTIVE PROCESSES

EVALUATING PROPOSALS

NEGOTIATE
PROPOSALS - IN SOME
PROCESSES

AWARDING THE
 CONTRACT

NEGOTIATING OR
 CLARIFYING CONTRACT
 IN SOME COUNTRIES

 CHECKING PRECEDENT CONDITIONS, APPROVING CONTRACT IN SOME COUNTRIES AND SIGNING THE CONTRACT

FINAL RFP AND FINAL

CONTRACT (IN SOME

INTERACTIVE TYPE)

CONTRACT AS SIGNED

(PUBLISHED IN SOME

AWARD DECISION

CONTRACT
 CLOSURE FINANCE

PROCESSES -

NEGOTIATED.

DIALOGUE OR

COUNTRIES)

SETTING UP CONTRACT

 MANAGEMENT TEAM AND STRATEGY

 OVERSIGHT AND APPROVAL OF DESIGN

 SITE SET UP AND PERMITS (AND COMPLETE ROW EXPROPRIATION IN SOME CONTRACTS), AND START CONSTRUCTION

MONITORING

CONSTRUCTION
MANAGING
CHANGES, CLAIMS

AND DISPUTES

COMMISSIONING /
ACCEPTANCE AND
START OPERATIONS

MONITORING PERFORMANCE

 MANAGING CHANGES, CLAIMS AND DISPUTES

 PREPARING FOR HAND-BACK

 HAND-BACK AND FINALIZATION

OUTCOMES AND PROGRESS OF CONTRACR AND TENDER DOCUMENTS

OUTLINE OF

TECHNICAL SOLUTION ECONOMIC ANALYSIS

 ECONOMIC ANALYSIS
 FINANCIAL PRE-ANALYSIS, PPP SCREENING REPORT, PROJECT MANAGEMENT PLAN FEASIBILITY REPORT INCLUDING AFFORDABILITY, COMMERCIAL FEASIBILITY (AND PSC IN SOME COUNTRIES) AND GO / NO GO RECOMMENDATION (INVESTMENT DECISION AND PROCUREMENT

DECISION)

PROJECT SCOPE REFINED

PROJECT DESIGN
• PRELIMINARY PPP

PROCUREMENT PLAN &
 PROJECT MANAGEMENT
 PLAN

GREEN LIGHTS TO MOVE TO STRUCTURING (GREEN LIGHT TO INVEST & PROCURE IN SOME FINAL FINANCIAL PLAN AND CEILING DEFINITION

RFQ FINALISED
 RFP FINALIZATION
 (SUBJECT TO
 CHANGES IN SOME
 PROCESSES)

 CONTRACT DRAFTED (SUBJECT TO CHANGES IN SOME PROCESSES)

AWARD DECISION
CONTRACT
SIGNATURE

POTENTIAL CHANGES
 TO CONTRACT
 DOCUMENTS

POTENTIAL CHANGES
 TO CONTRACT
 DOCUMENTS

DECISION CYCLE

 GREEN LIGHTS TO MOVE TO FULL-SCALE APPRAISAL

 GREEN LIGHT FOR LAUNCHING • APPROV

APPROVING CHANGES

APPROVING CHANGES

People First PPPs for the United Nations Sustainable Development Goals



F) ENGAGE ALL STAKEHOLDERS

PPP GOVERNANCE MODEL AND PROCESS BETWEEN GOVERNMENT, STAKEHOLDERS AND LENDERS.

