



“Commercially available technologies for Waste to Energy”

- GIZ’s pilot intervention in Nashik-

Dirk Walther, MSc./ME

Sub-Group 2 meeting “Renewable Energies”

Indo-German Energy Forum (IGEF)

Shangri-La Hotel, New Delhi 7th of May 2014



Background

*“ International Climate Initiative ” BMU-IKI
– 2 Million Euro Grant (2009-ongoing)*

Collaboration between
GIZ – MoEF - MoUD



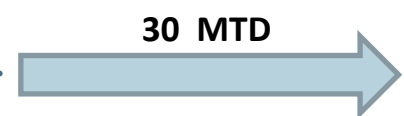
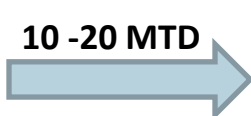
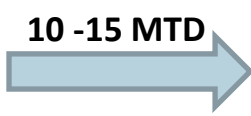
Innovation

- ❑ Waste to energy project is based on innovative concept developed by HAMBURG WATER Cycle®, which involves **co-fermentation of the organic degradable parts of municipal solid waste and black water from community toilets.**
- ❑ Close the loop approach provides additional benefits if it comes to **carbon footprint reduction and resource efficiency through co-generation of heat and power as well as energy and nutrient recovery.**
- ❑ The project is in the implementation phase in Nashik through a **Public Private Partnership (PPP) approach and built on a comprehensive financial and operational model** for achieving sustainability in operation.

Technology



Organic kitchen
Waste



W2E
Plant

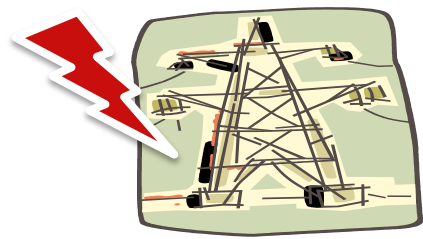


Fresh septage

*Tipping fees paid by
NMC to Operator*



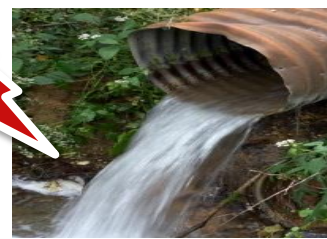
3200 kWh
Daily



Electricity

*1150 kWh electricity given free of
cost to NMC by Operator*

25 - 30 MTD



Treated Effluent

*Treated and disposed by
Operator (for aerobic
composting process)*

1.5 - 2 MTD



Manure

*Treated and disposed by
Operator (manure)*



Positive conditions in Nashik



Project Phases

Phase - I

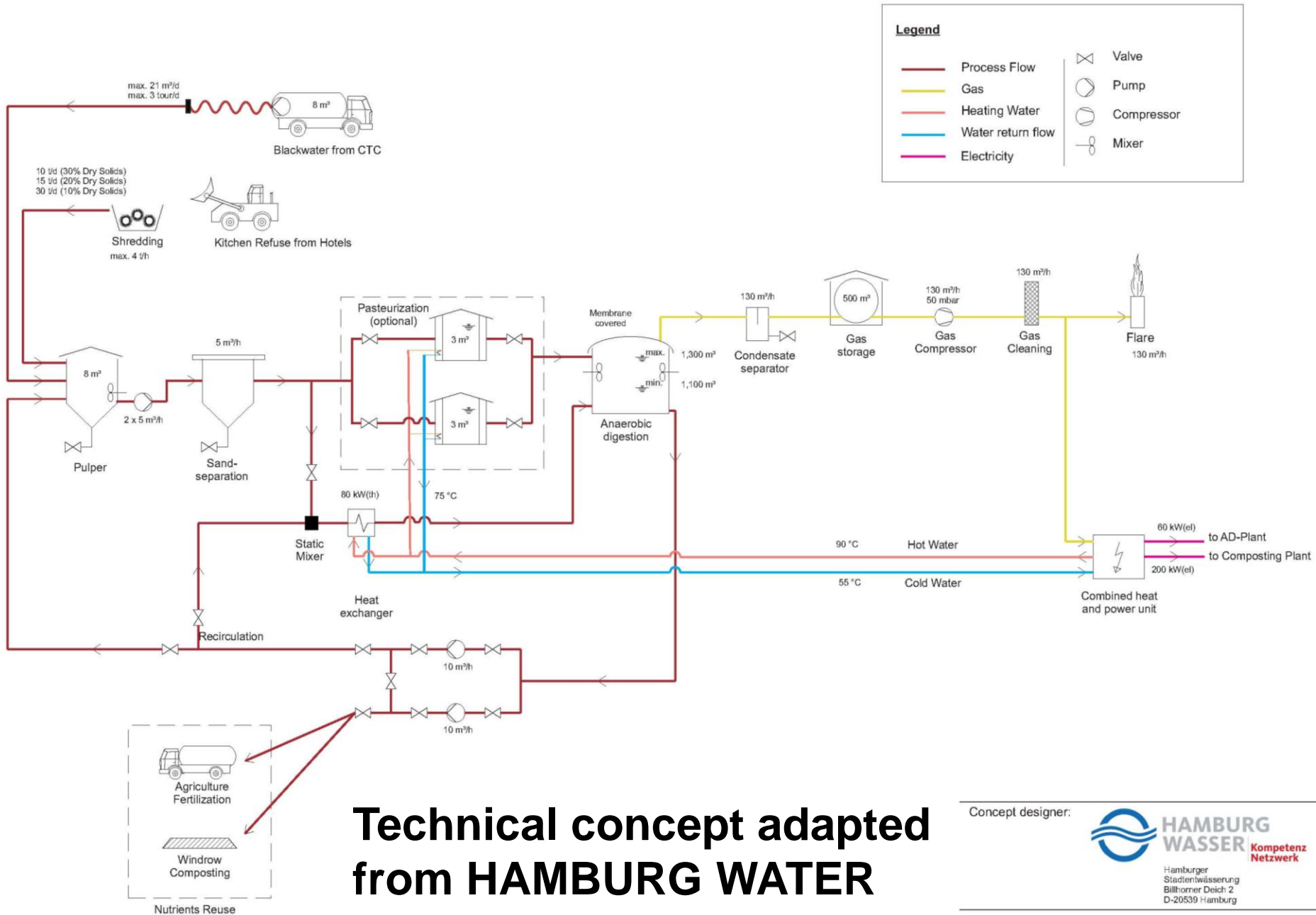
- **Memorandum of Understanding (MoU)** with all project partners

Phase - II

- **Feasibility Study** (Logistical, technical, economical viability and operator model)

Phase - III

- Detailed planning and construction of a **Pilot Plant**



Concept designer:



Hamburger
Stadentwässerung
Billhorner Deich 2
D-20539 Hamburg

Waste to Energy
in Nashik (India)
Process Flow Sheet

Steps for Implementation (delay)



Approval of concept design & business model by the techno-administrative bodies (1/2 year)

Signing of a Financial Agreement of about 6 Cr INR, which included political clearance (1 year)

Tender process ongoing, third call to be launched after CoC (1/2 year)

Construction and commissioning of the plant expected till end 2015



Conclusion

- ❑ **India needs technical innovation, pilots on the ground and Best Practices but...**
 - *technology alone does not provide financially viable and technically sustainable solutions. Finance mechanism, governance structures and institutional and human capacities are equally important and should go hand in hand with technical innovation.*
- ❑ **74th Constitutional Amendment is positive but...**
 - *urban local bodies are not prepared for infrastructure development and hence require strong handholding from the States until institutional and human capacities are built. With the devolution of powers elected bodies tend to play a stronger role in the decision-making process however they remain silent if it comes to accountability.*
- ❑ **Private sector involvement is good but...**
 - *Does not free Municipal Corporations from their responsibility as service provider and hence it requires strong regulatory mechanism by the States until public bodies evolve as an equal partner to the private sector able to negotiate “fair” contracts.*



Considerations for IGEF

- Guidelines for ULBs to prepare technically, financially sound DPRs**
- Empanelment (...and training) of service providers for the preparation of DPRs**
- Help desk for States/Cities in order facilitate: (a) project development, (b) DPR preparation, (c) funds allocation, (d) tender processing and (e) O & M mechanism**
- Orientation for private sector emphasizing future market potentials**
- Guidance to States in NRE related Capacity Development initiatives (e.g. for operators, engineers, managers)**



As a federal enterprise, GIZ supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

Published by

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices, Bonn and Eschborn, Germany

Support to the National Urban Sanitation Policy

2nd Floor, B-5/2, Safdarjung Enclave New Delhi – 110 029, India

T +91 11 4949 5353 Extn 2260

F +91 11 4949 5391

E dirk.walther@giz.de

I www.giz.de

Responsible

Dirk Walther

Author(s)

Dirk Walther

Photo credits

GIZ

Layout

GIZ

In cooperation with