

BUNDLED APPROACH PROPOSAL FOR WATER RE-USE IN OSHANA REGION

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INTRODUCTION

1. The 3 big Town Councils (Ondangwa, Ongwediva and Oshakati) in Oshana Region has a combined demand for water of about 303 000m³ monthly.
2. Of this 303 000m³, about 80% end up at the wastewater ponds, at an estimated volume of 242 400m³.
3. According to the guidelines in the National Water Policy White Paper of 2000, which was translated into a Water Resources Management Act of 2004, amended in 2013, water re-use is one of the principle under Water Use and Conservation.
4. Namibia is a semi-arid to arid country characteristically, and we all saw and felt the consequences of such aridity when it did hit last year.
5. The waste water from the sewerage systems is left in the drying ponds to evaporate to the air without any further use currently in our towns.
6. This waste water can be treated to various levels of quality, for further use. Uses can be for irrigation, blending or potable human use.
7. For interest sake, Cape Town was recently hit with a threatening drought that according to their statistics occur every 400th year. Blame was pointed to “failure to plan” by the City of Cape Town Management. To date they have started building desal plants, putting up water recycling/ re-use plants, and drilling BHs as deep as 900m down – just to have back-ups!

8. Under the German funded pilot project EPoNa, a technology based solution and business concept has been developed how to improve wastewater ponds and use the purified effluent for agricultural irrigation. During a meeting with a ministerial delegation under Dr. Alecke from BMBF on ... in Oshakata, the idea came up to make use of the EPoNa outcomes for more towns in North Namibia.

9. On a meeting in Windhoek on... the IEEM-research team with Prof. Rudolph, responsible for the EPoNa low-cost post treatment unit, the overall cost-benefit calculation and financing concept, offered cooperation. As former board member of Berlin Water (one of the famous Goreangab direct potable reuse plant operators) and as advisor to the City of Windhoek (building on a former IWRM pilot project in South-Africa) he was involved in the development and successful implementation of the UJAMS wastewater plant project (which, by the way, is equipped with the same type of fine screen for pre-treatment as used for EPoNa in Outapi).

10. Upon request of the Governor of the Oshana region, the ideas of a solution for wastewater reuse in Oshana are presented hereafter.

OBJECTIVES

1. There are experts who were involved with the establishment of the Goreagab Waste Water Treatment Facilities and the Outapi recycling plant, interested to assist with similar in Oshana Region
2. In the proposed concept, a consolidated treatment operation approach is proposed for Ondangwa, Ongwediva and Oshakati, for a positive return on the capital investment that is based on economy of larger scale.
3. The idea is to have fit-for purpose quality output, and to start off with, irrigation quality water is what the group of experts like to start off with, and if it works well, and there are sufficient funds, the production can move into a higher quality mode.
4. Various Financial Institutions and Organizations are to be approached for funding, and collateral arrangements may be required. For now, NamWater is one of the institutions pre-qualified by KfW for collateral signatory, as a state agency, apart from the National Government Treasury Unit.
5. Last but not least, the intended Enterprise will be applying a tariff on a bulk level to Local Authorities, as an incentive to pay-off the loans, sustain operations, and continue managing the business on behalf of the councils.

STRATEGY

Core strategic ideas:

- To professionally manage wastewater treatment, on a consolidated approach, along economy of scale
- To have a autonomous body for the operation and maintenance of waster water plants
- To strengthen and maintain Regional political governance
- To incentivise local water business development
- To acquire a combination of different financing sources, as grants and soft loans from donor banks and projects financiers

ENVISAGED OPTIMAL BENEFITS TO BE DRAWN

Treating waste water is beneficial; economically and environmentally!

- The local authorities may use treated water for irrigation, gardening, town trees/lawn spraying
- Treated water, depending on the class level of treatment, can also be used for blending with purified water
- The waste sludge can be treated further and used as compost/fertiliser for agricultural use
- A specified project can be chosen by the Local Authority, for production of fodder. An opportunity that may create further jobs in the towns or on the townlands.
- Environmentally, the bad smell and pesty mosquitoes may be minimised from towns proximity. Turning waste into useful products, promote environmental aesthetics for human health.

ENVISAGED TECHNO TO BE ENGAGED

A technical assessment need to be undertaken on the condition of the Evaporation plants of the Local Authorities by a representative Engineer of the Consortium.

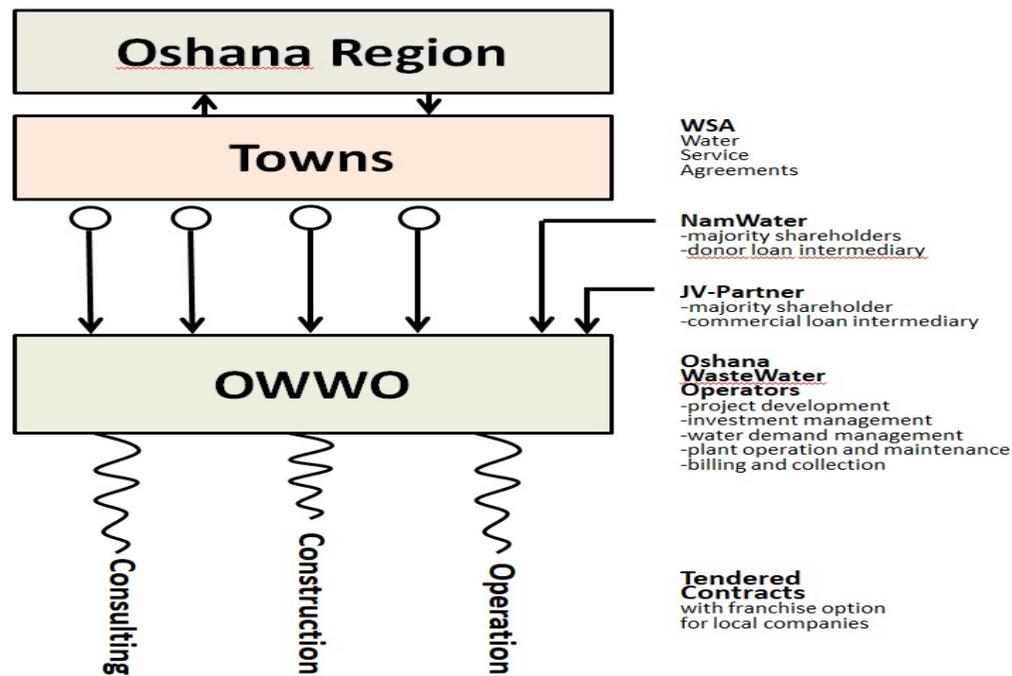
Then it shall be determined by the group of experts;

- what technologies from the EPoNa project can be applied for the Oshana ponds and water reuse
- what needs to be done, and what methodology and technology will be utilised for treatment services of the waste water.

BUSINESS CONCEPT

The three towns in Oshana Region shall enter water service agreements (WSA) and delegate wastewater purification and water reuse to a separate executive enterprise, to carry out its' obligations under the WSA. It is foreseen that (more or less all wastewater plants need rehabilitation, extension and upgrade for water reuse, and financial input for technical and O&M fulfilment and requirements.

The executive Enterprise can be named: OWWO (Oshana Waste Water Operators). Besides the technologies, the calculation model and financing concept from the EPoNa Project shall be available for OWWO.



STEPS FORWARD

1. The Honourable Governor with the Local Authorities Leaders to make a principal decision if they would like to partner with IEEM experts to continue with the concept.

2. Prof Karl-Ulrich Rudolph to come to Namibia and meet the Regional team, for further detail on the strategy and business concept.

- Elements of Technical MasterPlan for rehabilitation/ extension or upgrade of the existing plans to be discussed.
- Elements of the Financial Plan that include project financing, revenue and issues of affordability to be discussed.
- Elements of Organizational Plan, that include political and institutional concepts, as well as shareholders or representation partners to be discussed and set out.
- Procurement strategy, to achieve fair competition and support for local business, to be discussed and laid out.
- Conditions and milestones to be achieved for project development and implementation.

3. Prof Rudolph is prepared to come and meet the Regional Management Team for further discussion by middle of March.

DECISIONS DEADLINES, IF ANY

Should the Regional Team have alternative ideas to the approach and/or need further consultations on the presented concept, -due dates for re-convening this meeting or for reverting back to me for feedback can be proposed.

Thank you all for attending and interest to hear more about the venture!