

***Final Report  
(Contract No.  
3000056671)  
UNIDO–CTCN: Technical  
Assistance for piloting  
rapid uptake of industrial  
energy efficiency and  
efficient water utilization  
in the industrial sector in  
Zimbabwe***

*January 2019*

*Draft*

*Strictly Private and  
Confidential*



31<sup>st</sup> January 2019

To,

Mr Rajiv Garg  
Network & Capacity Building Manager  
Climate Technology Centre & Network (CTCN)  
UN City, Marmorvej 51,  
2100 Copenhagen, Denmark

Dear Sir,

**Subject:** Final Report (Deliverable 6) for “**Technical Assistance for piloting rapid uptake of industrial energy efficiency and efficient water utilization in the industrial sector in Zimbabwe**”  
(Ref - UNIDO Contract number: 3000056671)

We sincerely thank you for giving us an opportunity to undertake the assignment on “Technical Assistance for piloting rapid uptake of industrial energy efficiency and efficient water utilization in the industrial sector in Zimbabwe”.

As per the scope of the assignment outlined in the Terms of Reference, we are pleased to submit the Final Report. The Final Report includes the details of the services undertaken within Section 3 - Deliverable 6 of the Terms of Reference and covers: (a) Final report of 10 demonstration industries on Water & Energy Efficiency improvement and renewable energy utilization, (b) Manual on Energy and Water Management for Industry Sector in Zimbabwe, (c) Presentation on TA findings made at BCSDZ National Conference, and (d) Closure and Data Collection report.

We eagerly look forward to your inputs on this. Further, we would be happy to provide any clarifications or additional information necessary. We can be reached on the mentioned contact details or on my email id ([amit2.kumar@pwc.com](mailto:amit2.kumar@pwc.com)).

Yours sincerely,



Amit Kumar, Partner

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# Abbreviations

<b>BCSDZ</b>	Business Council for Sustainable Development Zimbabwe
<b>CTCN</b>	Climate Technology Centre & Network
<b>ISO</b>	International Organization for Standardization
<b>MEPD</b>	Ministry of Energy and Power Development
<b>MEWC</b>	Ministry of Environment, Water and Climate
<b>MIC</b>	Ministry of Industry and Commerce
<b>NDE</b>	National Designated Entity
<b>SAZ</b>	Standards Association Of Zimbabwe
<b>SIRDC</b>	Scientific and Industrial Research and Development Centre
<b>TA</b>	Technical Assistance
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>UNIDO</b>	United Nations Industrial Development Organization
<b>ZERA</b>	Zimbabwe Energy Regulatory Authority

# 1. Introduction and progress status

## 1.1. Background

Zimbabwe is presently facing a deficit of key resources, namely, power and water to meet its demand. The water supply of the country has been affected by the adverse effects of climate change. The prevailing power deficit leads to unmet demand/load shedding in end-use sectors. Industry is one of the major contributors to the national energy consumption. Key indicators of Zimbabwe are presented in **Figure 1**.

The total available water for Zimbabwe is around 20 million mega-litres (in the form of surface and underground water). After the agricultural sector, water use is highest in the urban, industrial and institutional sector (15%). Limited monitoring and measurement of water and energy use, outdated

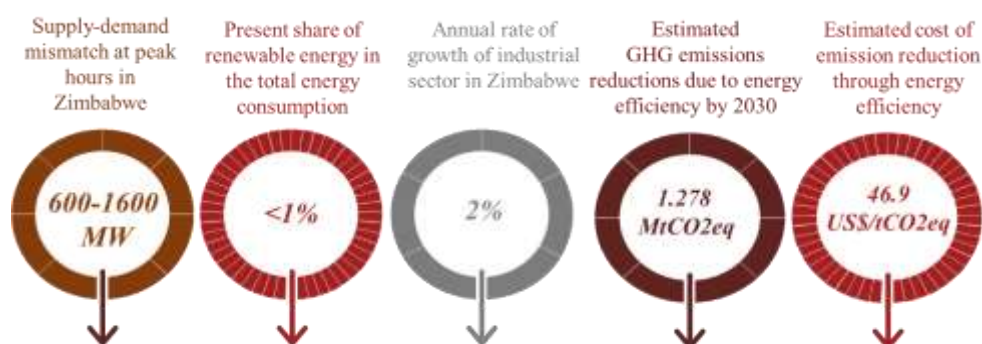


Figure 1 Key indicators of Zimbabwe

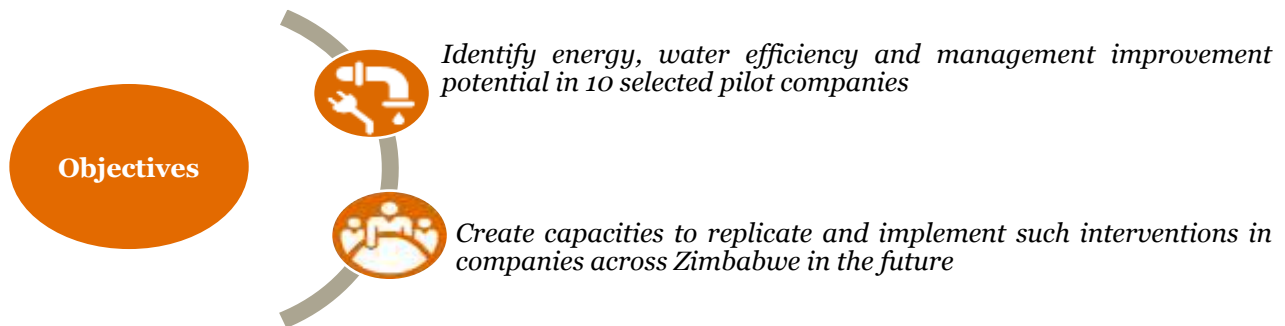
equipment and inefficient processes have resulted in energy and water consumption above global industry benchmarks. Zimbabwe is experiencing water scarcity, which affects industrial production. Presently, the energy demand is growing gradually at 2% annually. However, Zimbabwe's 3<sup>rd</sup> National Communication to UNFCCC predicts that manufacturing sector would be among the biggest consumers of electricity by 2030. The genesis of the Technical Assistance is shown in **Figure 2**.



Figure 2 Genesis of Technical Assistance

## 1.2. Objectives of the Technical Assistance

The objective of the Technical Assistance is to identify energy, water efficiency and management improvement potential in ten selected demonstration companies and create capacities to replicate and implement such interventions autonomously in companies across Zimbabwe in the future. In the medium term it is expected that this will lead to a reduction of energy and water consumption as well as greenhouse gas emissions of the ten demonstration companies. At the same time, the expected gains from the increased profitability will and strengthen the competitiveness of the respective industries. Main objectives are highlighted in **Figure 3**.



*Figure 3 Objectives of the Technical Assistance*

The overarching goal is to create and showcase examples of successful resource efficiency improvements, which can be replicated by local technical staff to benefit industries nationwide.

- Identification and selection of ten pilot companies for energy and water efficiency audits
- Execution of energy and water efficiency audits in the ten selected pilot companies
- Analysis of renewable energy supply side opportunities for each company
- Awareness raising on the benefits of resource efficiency, from a sustainable business perspective, and hands-on training of technical staff to identify and implement resource efficiency processes and technology improvement opportunities
- Development & sharing of guiding material, and communication to key stakeholders

### **1.3. Progress status**

The project is executed in six steps according to the work plan, the steps are defined as **Outputs** and each output is linked with a set of project deliverables. The overall outcome of the TA is to reduce intensity of energy and water use in the 10 demonstration companies and training of local technical staff to replicate interventions.

The detailed work progress is presented in **Figure 4**.

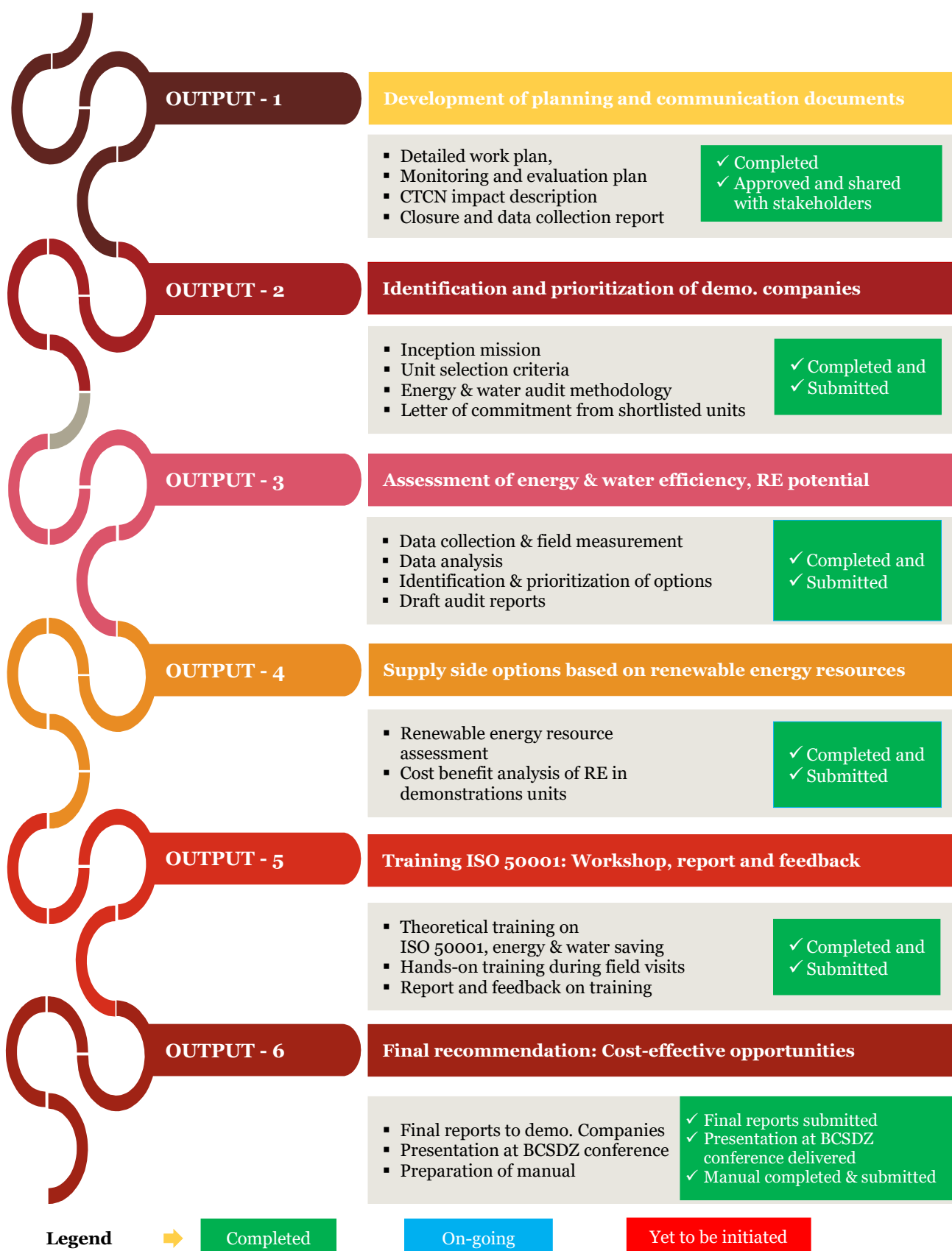


Figure 4 Work progress

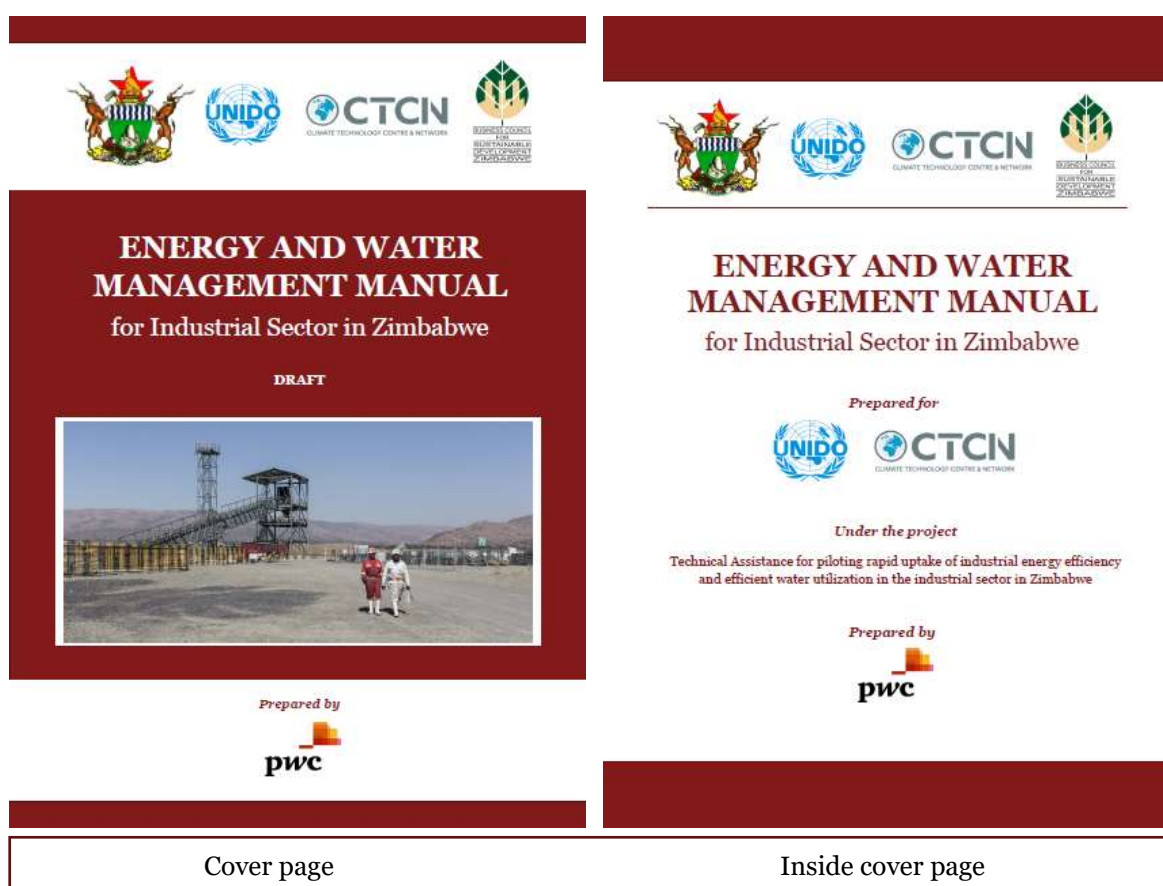
## 2. Deliverable 6

### 2.1. Final energy and water audit reports

The draft energy and water audit reports along with supply side renewable energy opportunities backed with financial analysis and economic viability was shared with ten demonstration industries. Based on feedback from industry, CTCN, BCSDZ and NDE the reports were modified and **submitted to CTCN as part of progress report 2 and 3.**

### 2.2. Manual on energy and water management for industry sector in Zimbabwe

The draft manual on energy and water management for industry sector in Zimbabwe is developed and shared with CTCN, BCSDZ and NDE for feedback. The cover page of the manual is presented in **Figure 5**. The manual is attached separately along with this final report.



*Figure 5 Cover page of the manual on energy and water management*

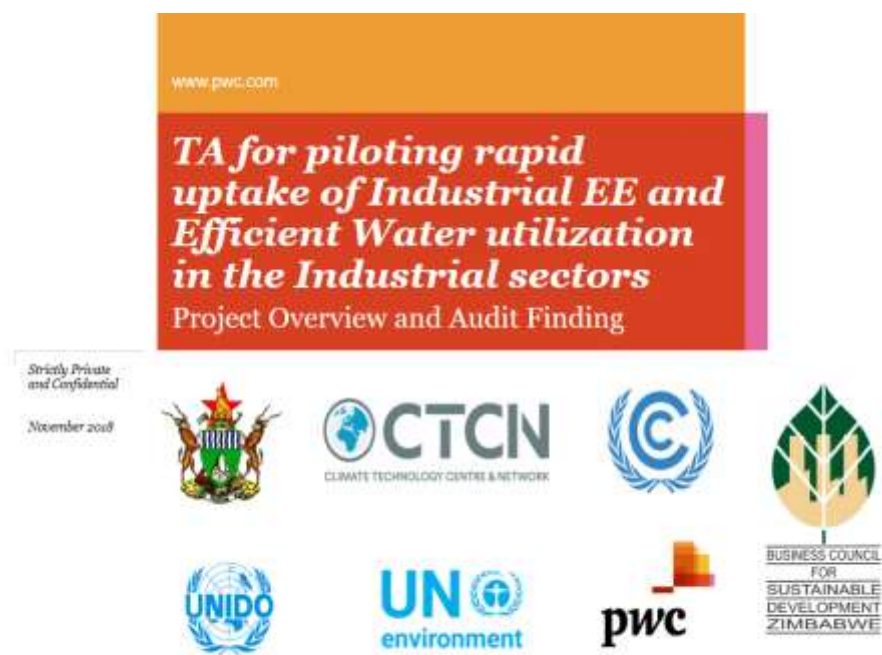
### 2.3. Side event at the BCSDZ National Conference

The findings of the technical assistance were presented to a wider audience through a side event at the BCSDZ National Conference held in Harare on 21<sup>st</sup> November 2018. The session was attended by 67 candidates. Pictorial view of conference and the title page of the presentation is presented in **Figure 6** and **Figure 7**. The presentation is attached separately along with this final report.





*Figure 7 Pictorial view of BCSDZ Conference*



*Figure 6 Title page of presentation made at BCSDZ conference*

## ***2.4. Closure and data collection report***

The closure and data collection report is completed and attached separately along with this final report.

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