

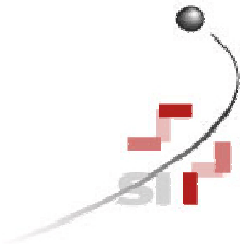
Green IT Project

for

Green World Company Ltd.



05.12.2011

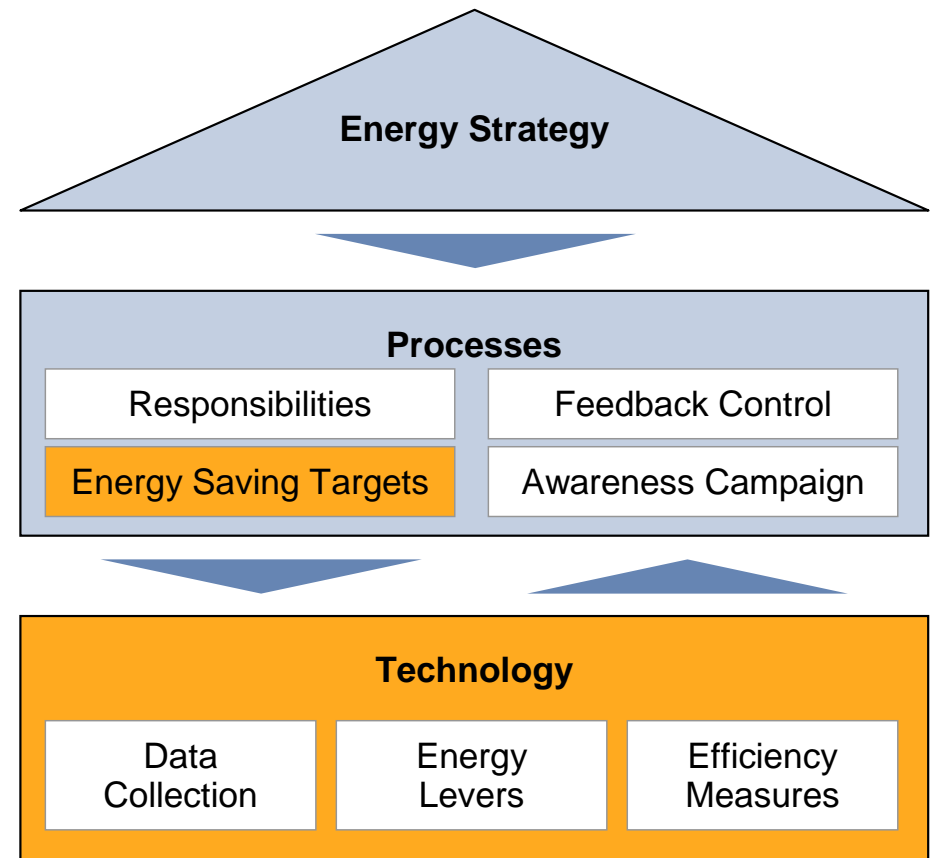


Green World Company Ltd. wants to support its energy strategy by reducing costs through Green IT measures.

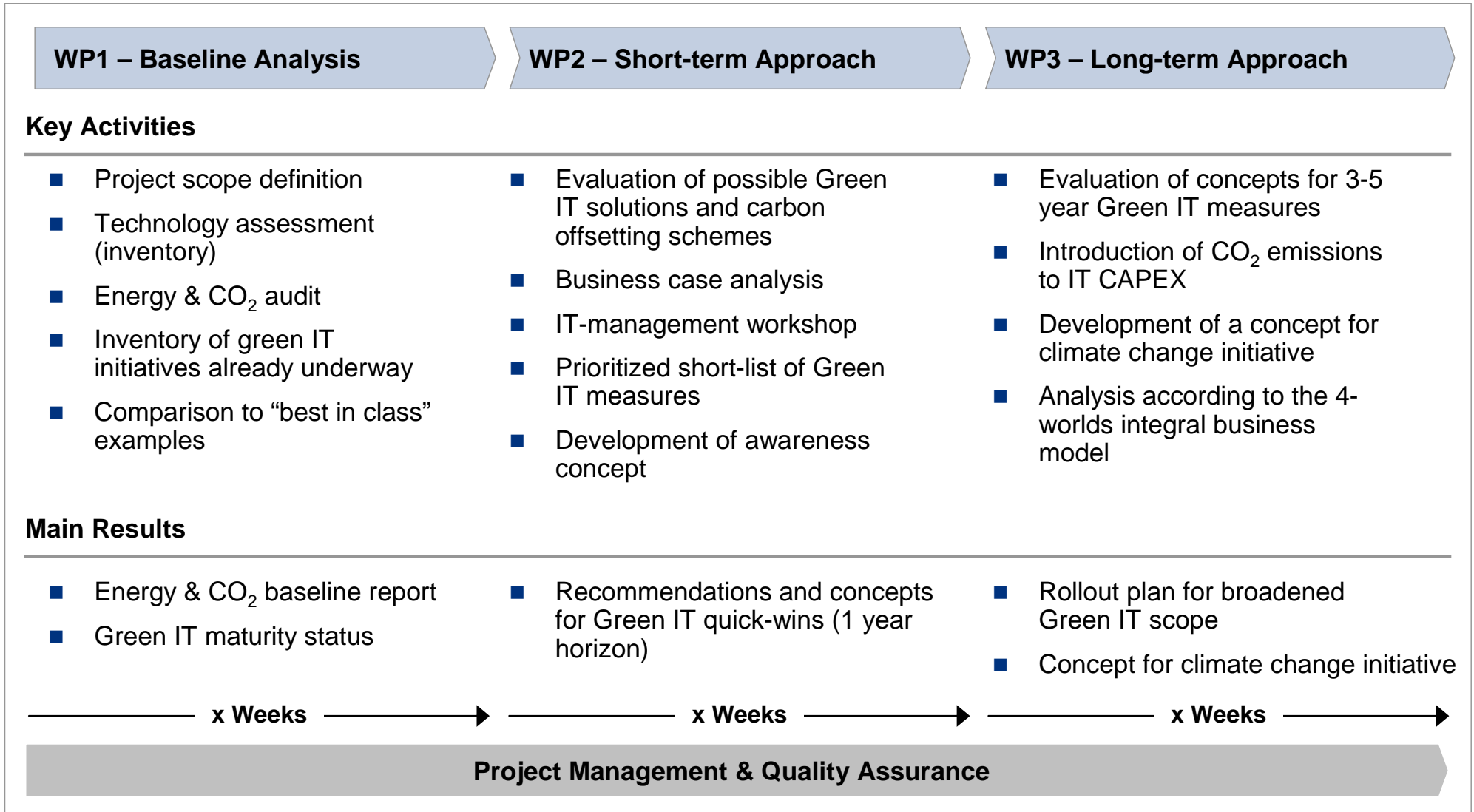
Drivers for Green World Company Ltd.

- Increase of Green IT maturity: Green IT is everything around energy efficiency and sustainability in the IT space.
- Creation of transparency with regard to energy usage and CO₂ emissions of the different components.
- Development of a conceptual framework, which outlines short-term operational measures to realize energy-related quick-wins in the distributed IT infrastructure. Calculate the concrete CO₂ reductions.
- Derive a 3-5 year sustainability strategy that evaluates further possibilities, such as an extended scope of IT domains to ensure carbon neutrality and to strengthen Green World Company Ltd. employer brand.
- Evaluation of additional possibilities, such as „Green Miles“, CO₂ offsetting-schemes, energy management on software level, expansion on other resorts of IT-infrastructure, or procurement policies.

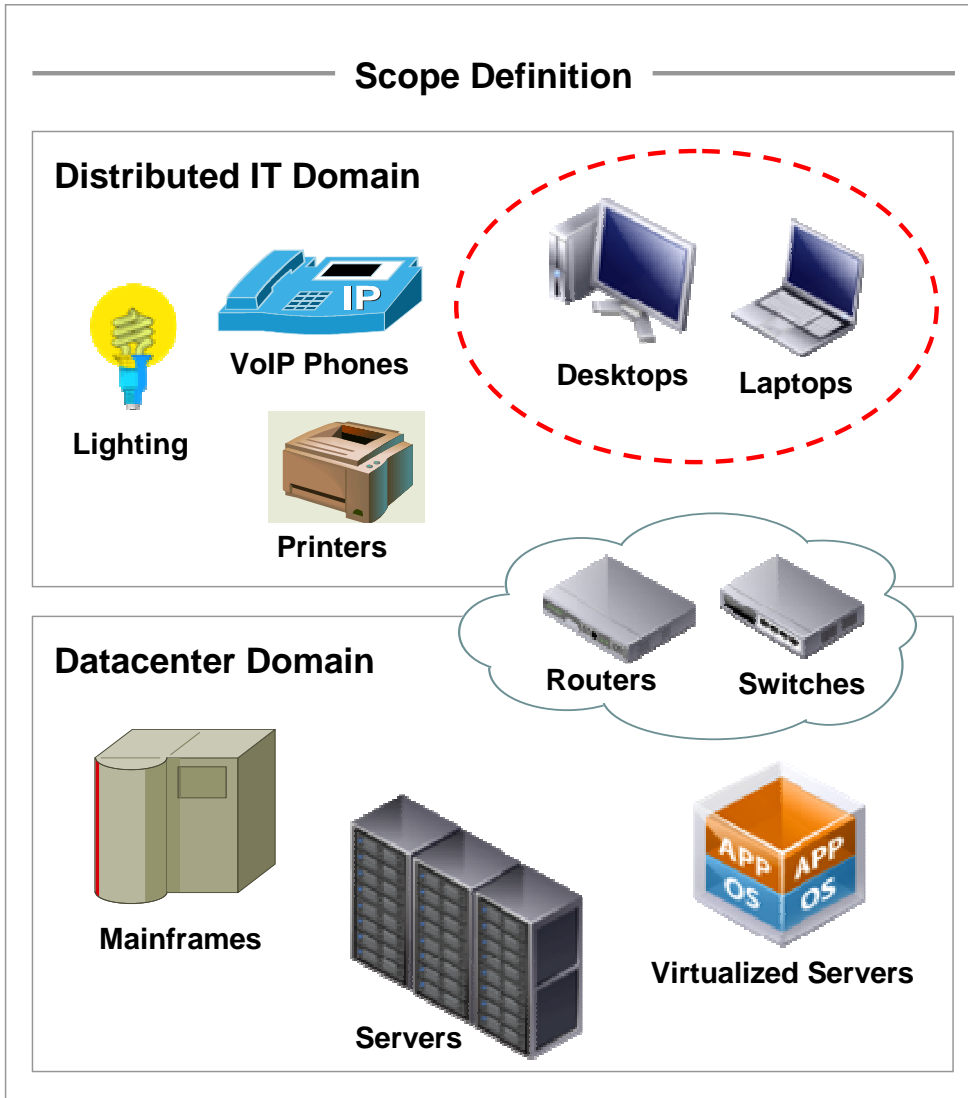
Organizational Layers



Green World Company Ltd. wants to analyze energy usage & CO₂-emissions related to the distributed IT infrastructure and develop measures to increase it's green IT maturity.



A detailed IT inventory list is created on the basis of technical and non-technical data and the prerequisite for the energy and CO₂ assessment.



Energy & CO₂ Assessment

- The initial project phase determines which components will be in the focus of the IT infrastructure audit and which scope of CO₂ emissions applies¹.
- A detailed inventory list of the distributed IT must be created, which includes all technical and energy-related data², as well as demands and requirements of the specific employee user group.

Customer ABC - Distributed IT Inventory List – Desktop PCs					
Computer Model	Power Supply	TFT	AS	KW/H	
Optiplex	360 DT	M618F and M619F	NEC 15"	No	345
	740 DT	All	NEC 15"	No	331
	760 SFF	RM112 and WU136	NEC 15"	Yes	134
	960 SFF	RM112 and WU136	NEC 17"	Yes	211

- The outcome of the inventory list is matched against state-of-the-art infrastructure solutions, in order to analyze the Green IT maturity of Green World Company Ltd.

1) Scope of greenhouse gas (GHG) emissions of a specific reporting entity (Scope 1, 2, 3)
 2) Dependent on availability of data

A hand in hand strategy of efficiency & compensation measures will be defined for Green World Company Ltd. in order to increase it's green maturity.

Efficiency Measures

Technical

- Hardware
 - Energy efficient hardware
 - Active energy management through activation via time recording systems
- Software (e.g. power management, pay-per-use models)

Organizational

- Set up lean provisioning / modular expansion of IT equipment
- Awareness Campaigns (behavior, processes)
- Introduction of penalties for electricity waste
- Definition of rules for sites, IT types or personnel



Compensation Measures

Green energy procurement

- Avoidance of indirect emissions by buying green energy from power suppliers.

Offsetting produced emissions

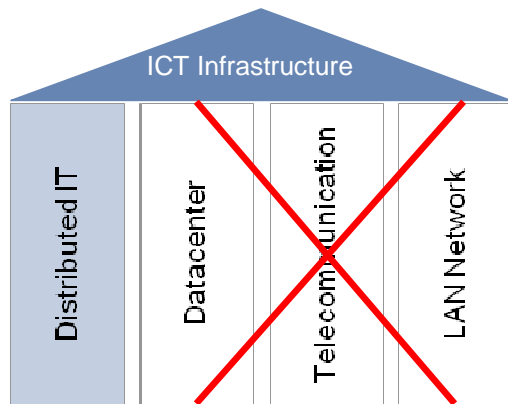
- **Certificates:** Using market-based Kyoto protocol aligned mechanisms to cap world CO₂ emissions.
- **Direct investments** in wind mills, water power, reforestation, etc. acc. to CDM³ gold standard schemes and mechanisms.

The long-term approach is based on a holistic Green IT scope and models to use IT as an enabler for Green Business to deliver holistic ICT efficiency excellence.

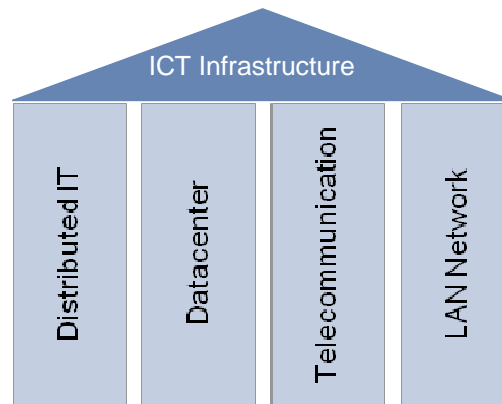
Green in IT

- Assessment of energy consumption and CO₂-emissions in the entire ICT infrastructure, such as servers, printers, routers, hubs, phones, ...
- Guidelines for the introduction of carbon emissions into IT CAPEX
- Development of efficiency measures for
 - Data center (e.g. high ratios of virtual servers to physical)
 - Telecommunication (e.g. VOIP solutions)
 - LAN Networks (e.g. energy-efficient routers and switches)

Short-term Scope



Long-term Scope

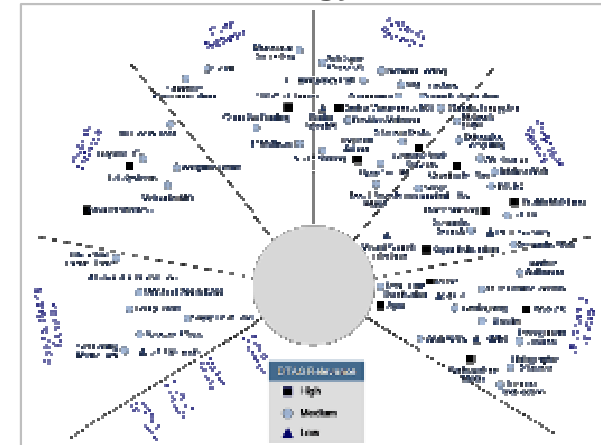


IT as the object to become Green

Green with IT

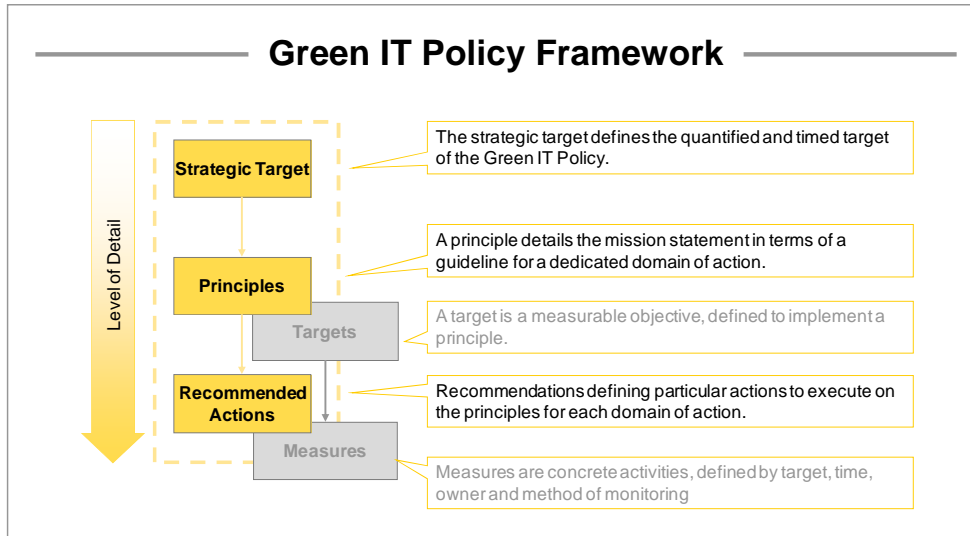
- Concept for climate change initiatives
- Linkage of measures to sustainable development programs e.g. “Clinton Global Initiative“
- Definition of CO₂-reduction goals (e.g. 20% until 2020 based on 2012)
- Evaluation of concepts for 3-5 year Green IT measures

Technology Radar



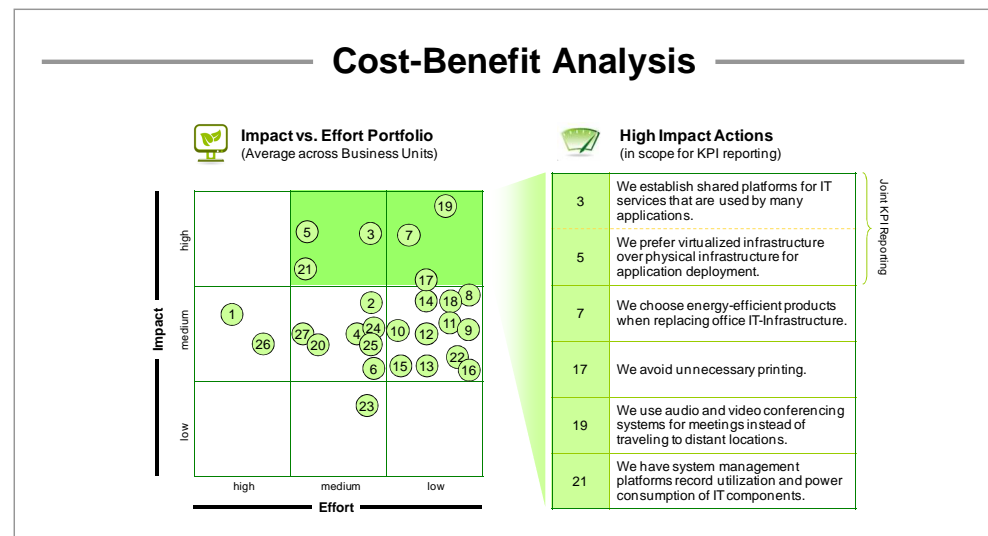
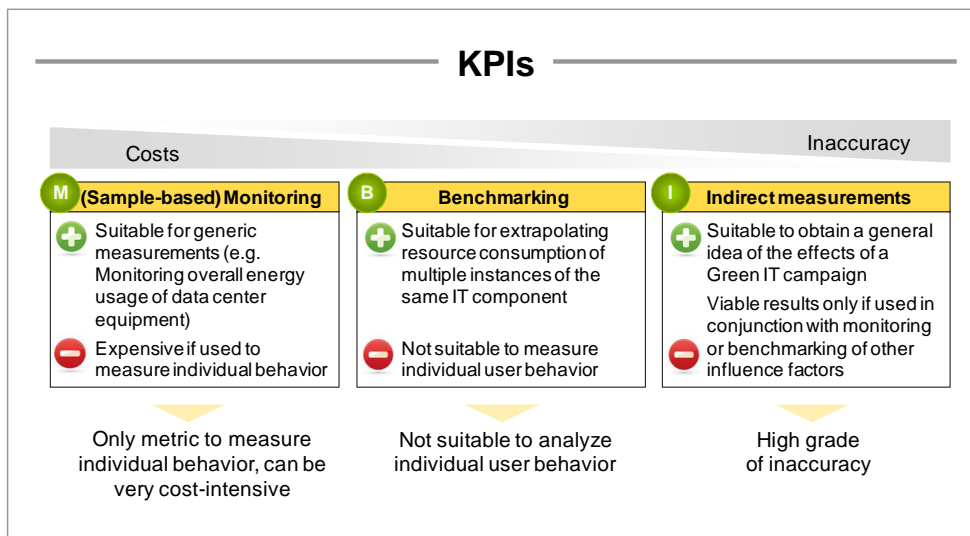
IT as an enabler for Green Business

A holistic green IT policy framework for Green World Company Ltd. contains the following elements.



Baselining CO₂ Footprint

System type	No. of Systems	kWh / h (Power)	Utilization Scenario 1 ¹⁾ (100%/100%)	Utilization Scenario 2 ¹⁾ (60% / 100%)
Windows	978	1,003	2,006	1,605
Linux	243	268	536	429
Unix	218	401	802	642
Total	1,439	1,673		
Total kWh / hr			3,345	2,676
Total kWh / year			29,304,828	23,443,512
Energy Mix 1 (635.4²⁾) in CO₂/t (60% Fossil, 40% nuclear)			18,620	14,896
Energy Mix 2 (562.7²⁾) in CO₂/t (50% fossil, 25% nuclear, 25% renewable)			16,782	13,426





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