

Energy for Cabo Verde' future

Some reflections

Marcel KLesen

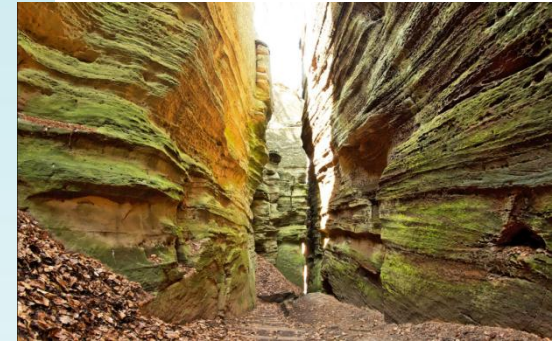
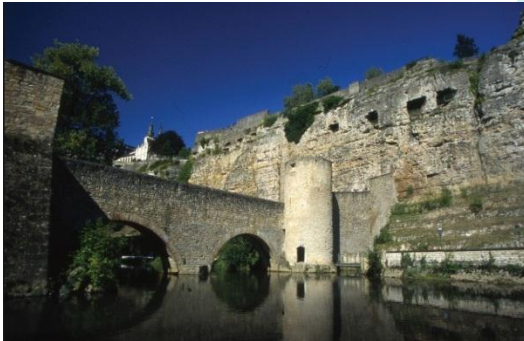
Luxembourg EcolInnovation Cluster

May 2014



- **“One World Tower” is based on Giant Steel Sections produced in Differdange, Arcelor Mittal**
- **Guardian Luxguard S.A., “Burj Khalifa Tower”**
- **SES, Hitec, Apateq, TARKETT, SolarTEC, ...**

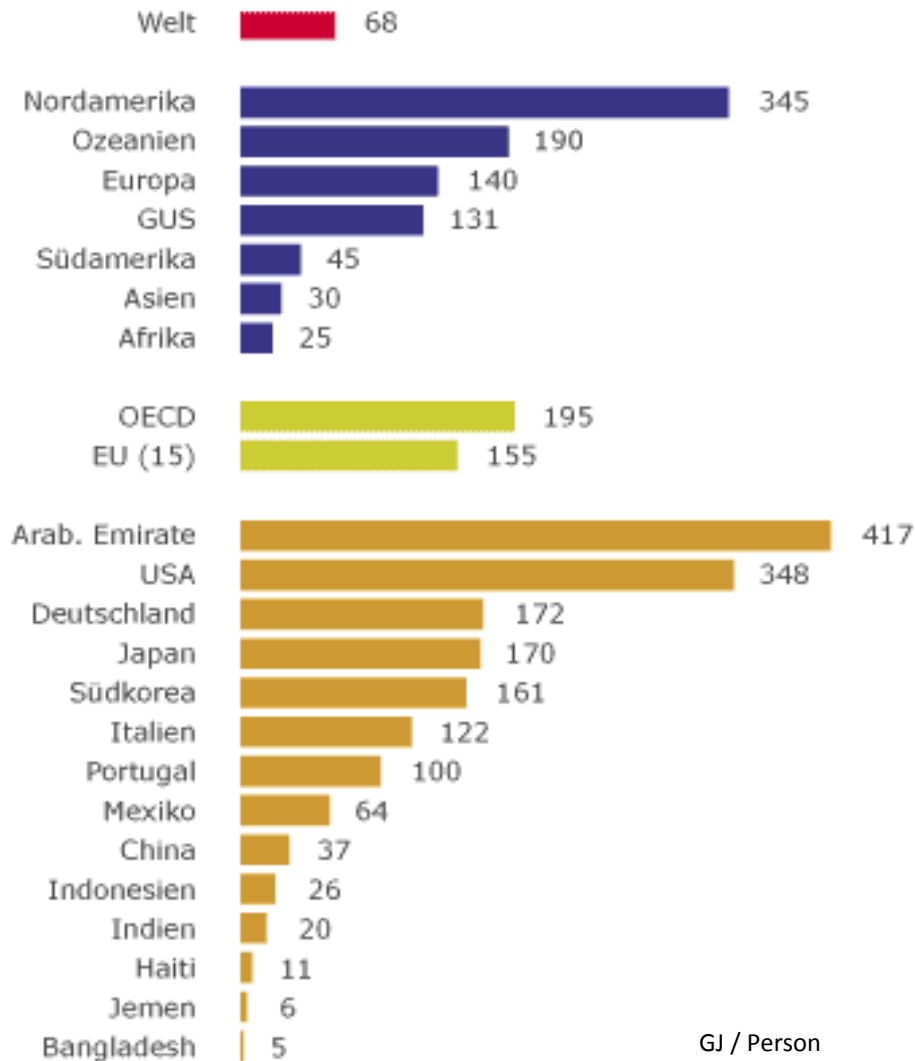
GEOGRAPHY



Renewable Energy

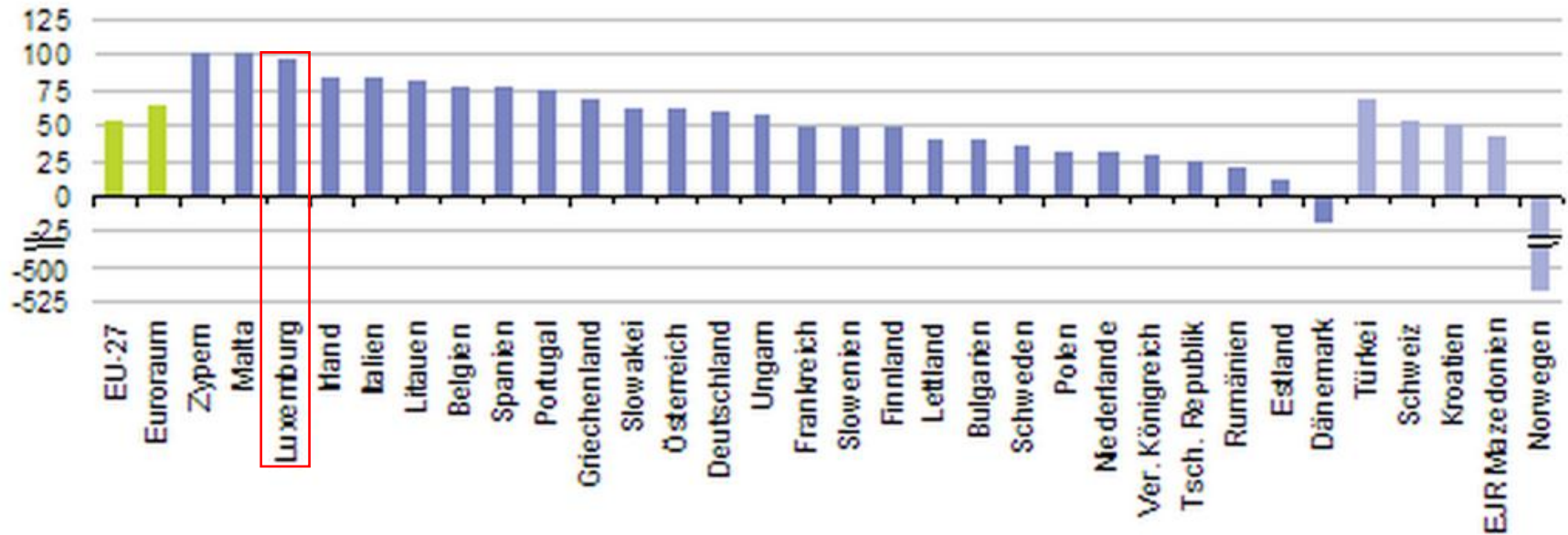
- Wind
- Solar Power (el. and th.)
- Biomass, (waste to energy)
- Hydropower
- Geothermal
- Biofuels
- Hydrogen (fuel cell)
- *Energy Efficiency*
- *Green ICT*
- *Green Logistics/Transportation*
- *Green ...*

Renewable Energy



GJ / Person

Renewable Energy



Energy dependency EU

@ Eurostat

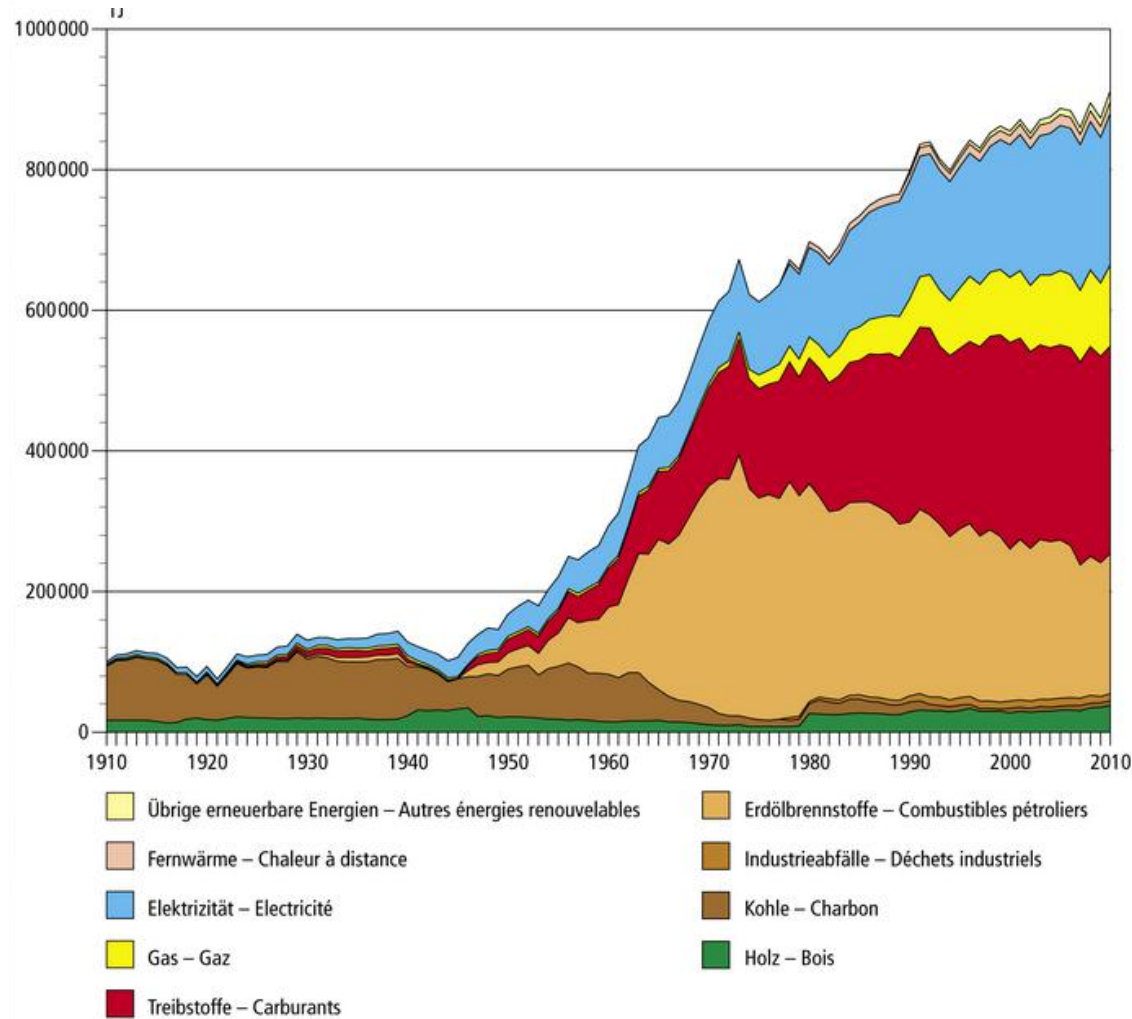
II Fórum Nacional de Transformação
CABO VERDE 2030

Cidade da Praia
14 a 16 de Maio de 2014

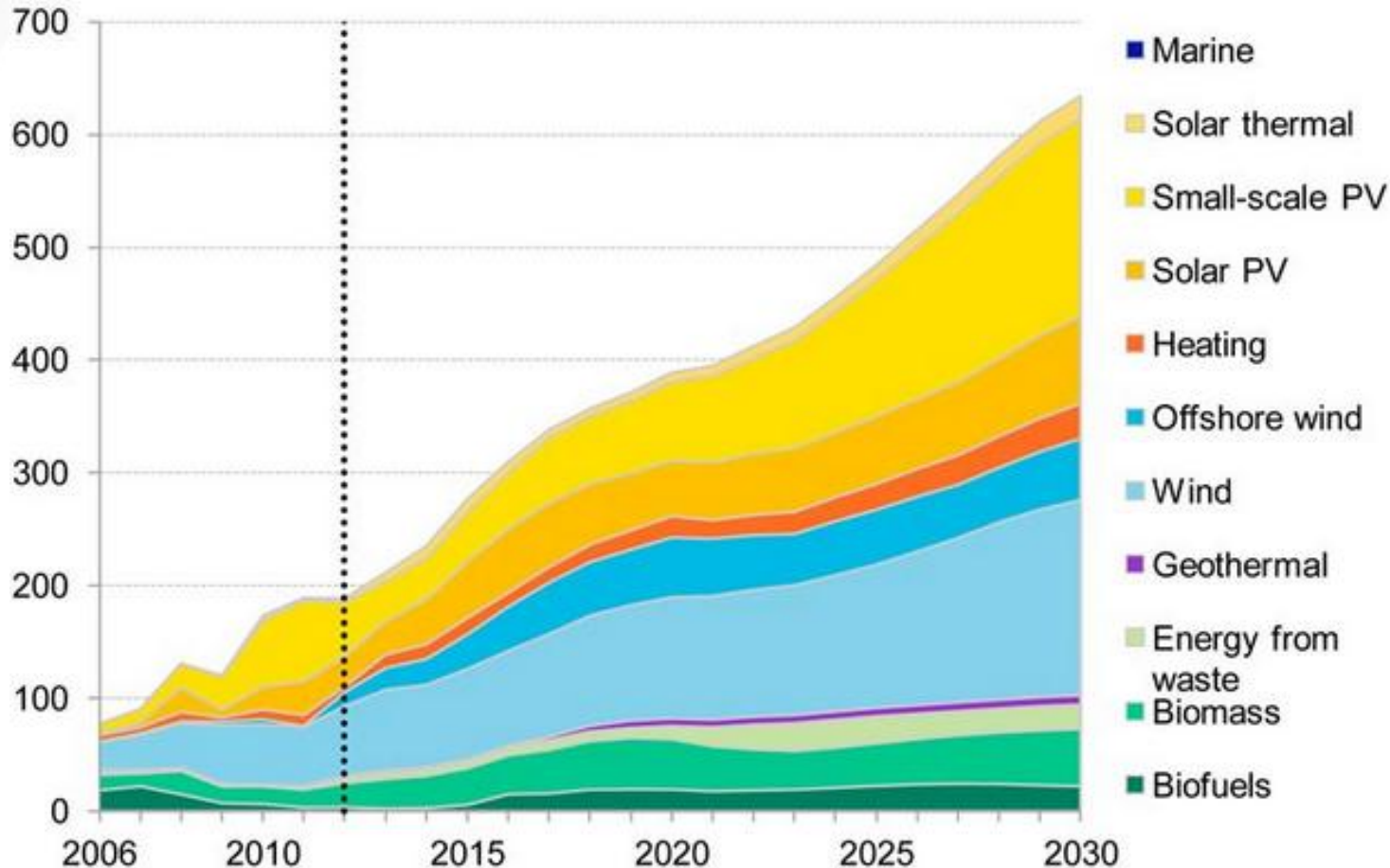
Top Countries with Installed Renewable Electricity by Technology—2012



Renewable Energy



Renewable Energy



2012: Bloomberg foresees a sunny future for renewable energy and expects an annual global investment of ca. \$630 billion per year for 2030

Cabo Verde, Vision (@ ECREEE April 2014)

- Realise substantial fossil fuel cost saving
- Develop highly efficient farming using renewable energy for water production
- Integrate up to date cooling logistics for fishery and vegetables
- Develop high value added green tourism
- Build a modernised engineering and training culture on renewable energy
- **Strategy (step by step), Governance Leadership**



Renewable Energy



issues

- Energy supplier / grid operator
- Strong regulation is needed / energy policy
Government → Municipality → Citizen
- Attractive business model, attractive feed-in tariff
- Availability / storage / electricity balancing market
- Smart infrastructure and technological solutions adapted to the needs (regional, local)
- in-house production and consumption

Renewable Energy

Goals

- Better Carbon food-print of products and services
- Sustainable production and manufacturing
- Independency of fossil fuel importation
- Sustainable Tourism (**Branding**)
- Sustainable Mobility

→ “one beautiful island only with electric cars”

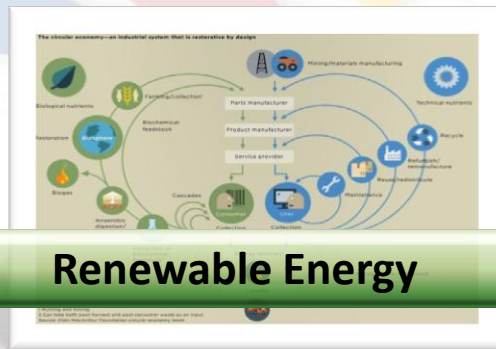


Strengthen the Luxembourg Eco-Tech and the Clean-Tech Sector

- Innovative Materials
- Rational use of natural resources



Mobility



Renewable Energy

Circular Economy Concept ((c) Ellen McArthur Foundation)

**Circular
Economy**



**Sustainable
Cities and Smart
Technologies**

Cluster companies, ...

Ren. Energy	SolartTEC, ELCO, SWIRL, Solair , Siegel-Schleimer, Innovat-technologies,
Water treatment	Apateq, Myriado, SEO, ...
Consulting	AECT, 3E Consult, Prosolut,
Construction	ProGroup, Cimalux, Polaris, Betons Feidt
Mobility	CityMov', Estonteco
Biomass	LEE, Soil- Concept, Boson
Waste	Superdreckskescht, Ecotrel
Grid	Enovos / Creos
Engineering	Paul Wurth / Dephi /
ICT / Materials / Space /...	

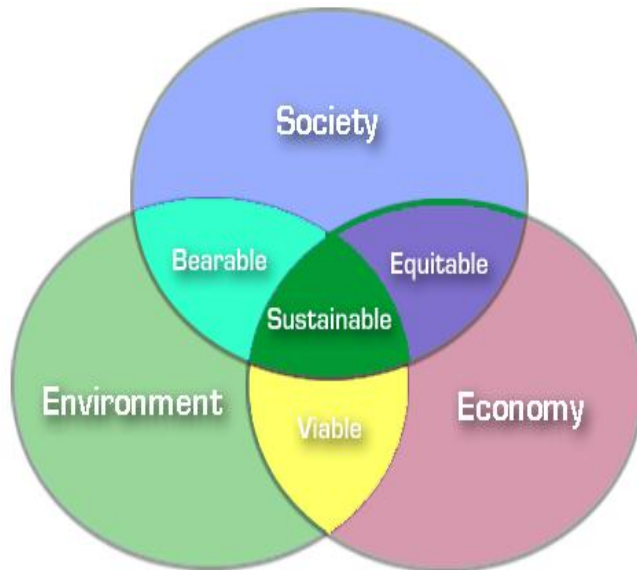


92 Members , 80 companies



1. Luxembourg is a reliable partner with Cabo Verde
2. Luxembourg is dedicated to clean-tech
3. Luxembourg has a reliable business environment
4. Luxembourg is a competitive country
5. Luxembourg believes in R&D / Innovation
6. Luxembourg is at the crossroads of Europe

....., **Keep in mind**



Energy

- is “everywhere”.
- is precious and expensive.
- is the key to economic growth.
- is the key to sustainability.

CABO VERDE 2030

Cidade da Praia

14 a 16 de Maio de 2014

Cabo Verde and Luxembourg, a reliable and strong Partnership!



Marcel Klesen

... , obrigado!