Workshop, Phnom Penh, October 30th-31th, 2012

ECOLOMY / ECONOGY GREENTECH

ENVIRONMENT (POLICY) IS NOT THE BAD GUY AND ENEMY OF ECONOMY BUT SUSTAINABILITY AND THE SOLUTION FOR FUTURE, EMPLOYMENT, PROSPERITY

Christian C. Juckenack

Prof. Dr. rer. nat. Dipl.-Geol. Erfurt, München

(Professor of Environment, Energy, Resources, FH Erfurt, University of applied Sciences, former State Secretary Ministry of Environment / later: Ministry of Economics, Labour, Germany, later: Senior Consultant on Desertpower for Siemens AG, Renewable Energy Division)



Global market volume for environmental technologies in 2007 [EUR bn]

Source: Market studies, interviews with experts, Roland Berger







Source: Roland Berger



Importance of regional markets and competition to environmental technology companies, 2008 and 2020

GLOBAL CHALLENGES

ENERGY SUPPLY, RESSOURCES

PROSPERITY <-> POVERTY DEVELOPMENT, ECONOMY, WORK, CONSUMPTION

CLIMATE, ENVIRONMENT PROTECTION, SUSTAINABILITY



Perspective of Energy production



Quelle: Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen, 2003, www.wbgu.de



Entwicklung der Stromerzeugung aus erneuerbaren Energien in Deutschland

Geothermische Stromerzeugung auf Grund geringer Strommengen nicht dargestellt.

Quelle: Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Hrsg.): Zeitreihen zur Entwicklung der erneuerbaren Energien in Deutschland, Stand 07/2011, Klär- und Deponiegas zusammengefasst

German energy-policy: reduction and expansion goals

	<u>2020</u>	<u>2030</u>	<u>2040</u>	<u>2050</u>
THG / GHG (% 1990)	40	55	70	80-95
EE / RE total energy (%)	18	30	45	60
EE / RE electr. energy (%)	35	50	65	80
Reduction primary energy (% 2008)	20			50
Reduction electr. energy (% 2008)	10			25
Reduction traffic energy (% 2008)	10			40

Climate Change is expensive Increasing costs for national economies (e.g. Germany)







Windpower

SIEMENS AG, Dep. Renewable Energy

GENERATION by WIND: SIEMENS Wind Turbines for offshore SWT-3.6-107: in series since 2006* SWT-2.3-101: low and mid-wind

* also as SWT-3.6-120 for better efficiency

Concentrated Solarpower (CSP) + Innovative storage solutions

SIEMENS AG, Dep. Renewable Energy



Andasol I, Spain



Biogas plant by SCHACHTBAU GmbH



www.schachtbau.de









TLL Jena, Reinhold 2002

Annual World Biofuel Production 1991 - 2008



.. but environment policy is much more than energy and climate change

Challenge & Chances: Remedation of Mining Areas, Brownfields

Damages (coal / ore opencast mining areas)



Brown coal mining

Succesion



Damages (industrial sites)



Industrial "sediments"

Water-erosion



Damages (former Uranium opencast mining)



Damages (former Uranium opencast mining)

Remediation, Recultivation (same former Uranium opencast mining 2007)

ZeitRaum für Begeg ich in Thüringen

Central Horticultural Show 2007 .. on this remediated Uranium-site Challenge & Chance: Recycling of waste materials Remediation of disposal sites



Bild 1: Beispiel für nachhaltige altlastbedingte Auswirkungen: Emission, Immission, Setzungen, Grundwasser











EuRec[®] concept for sustainable waste treatment





Waste material treatment: Seperation

Waste material treatment: Incineration plant

Remediated, recultivated waste dump: gas control and use, sewage control, multi renewable energy

Bild:Abfalldeponie in Nentzelsrode, rekultivierter Teil Landkreis NordhausenQuelle:TMLNU

Challenge & Chance: Water supply & Waste water treatment

Aus: Grotzinger/Jordan/Press/Siever, Allgemeine Geologie, 5. Aufl. © Spektrum Akademischer Verlag GmbH 2008

Reference projects – water management

Sewage treatment plant Leipzig – Rosental

<u>Customer:</u> Municipal waterworks Leipzig (KWL)

Realisation period: 2003 – 2008 Overall value:

ca. 7.4 Mio.€

Reference projects – water management

SWTP Markleeberg – Aeration Basin II

.. another global task: reduction of land consumption

Soil and Settlement areas - non-renewable resources also

-> intelligent solutions for future settlement and structural change

Soil:

a non-renewable resource

Greenfield-need agriculture / food production

11/m

Greenfield-consumption / destroyment e.g. shopping center (often short-time ..)

. Art.

Mar

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Havelark

CONCLUSION

Greentech-Industries: public income, employment (e.g. East-Germany)

Modern societies: on the way from first to fourth sector

from agriculture -> industry -> service
to -> information & EcoLomy/EcoNogy

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Greentech, Green market:

let's move forward, let's do it together as a west-east sunbow ..

Fields of Greentech-operation and cooperation:

- Science, R&D
- Production, Engineering, Services, Trading:
 - Companies, Associations
- Legal framework, politics, funding systems
 Politics/GO, NGO
- PR, marketing, foreign affairs
- etc. ...

Thanks for your attention !