

Renewable Energy in Developing Countries 2009

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Renewable Power Capacity in the BRIC Countries

*The RE Power, excluding Large Hydro, in the
Developing Countries Amounts Today to 120 GW
(EU: 100 GW), almost all in the BRIC Countries*

- China is the World Leader in Wind Power (20 GW),
Small Hydro (+/-50 GW), SHW (2/3 of global
capacity), PV (over 200 manufacturers)....*
- India is Strong in Wind Power (10 GW installed)*
- Brazil is a World Leader for Bio-Energy*

RE in Russia: Historical Interest in the USSR

- *Photovoltaics: Azerbaijan (Cathodic protection of Pipelines), Central Asia, Turkmenia (Navigation Signs, Water Pumping)*
- *Solar Heat: Buildings, Greenhouses, Drying*
- *Bio-energy: 1% of Energy Consumption (Wastes...)*
- *Wind: Russia had by 1956 9000 Water Mills and by 1940 10 000 Series-Produced Generators up to 15 kW*
- *Geothermal: One Plant in Kamchatka*
- *Tidal: One Plant on the White Sea since 1969*
- *A New Start in 2009? 7GW of Wind Power by 2020?*

Decentralised Energy Supply

- *Today still 2 Billion People rely on Bio-fuels for Cooking (15% of World's Energy Demand)*
- *More than 1.6 Billion People Lack Electricity*
- *Millions of PV Solar Home Systems (SHS) for Lighting and Cellular Phone Supply have been Deployed*
- *Less than 1% of the Diesel Set Market (Millions of Units) has been captured for PV Water Pumps (+/- 40,000 PV Pumps by now in Total)*

REnergy in the EU's Aid Programmes

- *The EU Commission provides +/- 7 Billion €/year as Aid Subsidy to over 100 Countries Worldwide: REnergy get only “Homeopathic” Shares of it*
- *Programming for the ACP Countries comes through DG DEV; for the Others through DG RELEX*
- *Office EuropeAid (AIDCO) in Brussels is in Charge of all Implementation*
- *Commission Delegations in Beneficiary Countries take care of Local Implementation; Regional Programmes are managed by AIDCO in Brussels*

REnergy for Lighting

- *Technological Revolution through the Emergence of LED Lights; also new Li-ion Batteries*
- *World Bank Programme “Lighting Africa”*
- *“Barefoot Institute” in India Implements Programs in India, Afghanistan, Africa with Local Women in the Village*
- *Nepal is a Pioneering Country: by Next Year 250,000 LED lights installed (eg Karnali Enlighten Project): 2 lights + radio per household, 5W, 30 €, 50 to 95% subsidised*

REnergies for Water Supply

- *Wind has a long Tradition for Water Pumping: Much “Acquis” has been Lost by Now*
- *Electric Pumping (Desalination Left out so far) With Photovoltaics*
 - *The EU Implements since 1986 the PRS in 9 Sahel Countries in West Africa (over 600 Systems, 50 Million €), A Second Phase is in Progress*
 - *GTZ/BMFT deployed 120 PV Pumps in Argentina, Brazil, Jordan, Indonesia...*
 - *UNDP/WB Promote PV Pumping since 1979*
 - *Marocco (Spain Promoted): 50 pumps for 40,000 people (1€ per Household and Month)*

PV Power for Communication

- *Since the Early 1970s, France has Organised School- TV Provided by Satellite and Powered by PV in West Africa*
- *Since 2006 EU AIDCO has Embarked on a Programme with 600 Villages in 8 Countries of Latin America to “Bridge the Digital Divide” (EU Budget 30 Million €) Internet is Provided via Satellite. Community Systems Powered by PV and Micro-Wind Power are Installed in Schools; Also Open to the Public*

Decentralised Renewable Energy in China

- *Recent Installation of 80 000 Micro PV Systems in Remote Areas of Sichuan*
- *For the Olympics Beijing got 135 000 PV-Powered Street Lights*
- *In Tibet in 2008 2500 PV Sets in “No-Electricity-Areas-Electrification Programme”*
- *Earlier on, “REDP” Project with WB/GEF/NDRC*
- *Earlier on, “China Brightness Project”*
- *Earlier on, “China-Rural-Township-Electrification Programme”*

Outlook: Power for the World

- *On Behalf of the EU Commission the Author has Proposed “Power for the World”: Providing All People Lacking Electricity Today with 10W/head for Survival Needs; Within 10 Years*
- *A Mature Solar Technology were Available Now to this End*
- *The Cost Would Represent Just 1% of Present Global Aid Budgets*
- *The Main Problem is Local Implementation*

