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Roy Adair - CEO

PART I
Renewable energy Growth: Hydropower observations and opportunities

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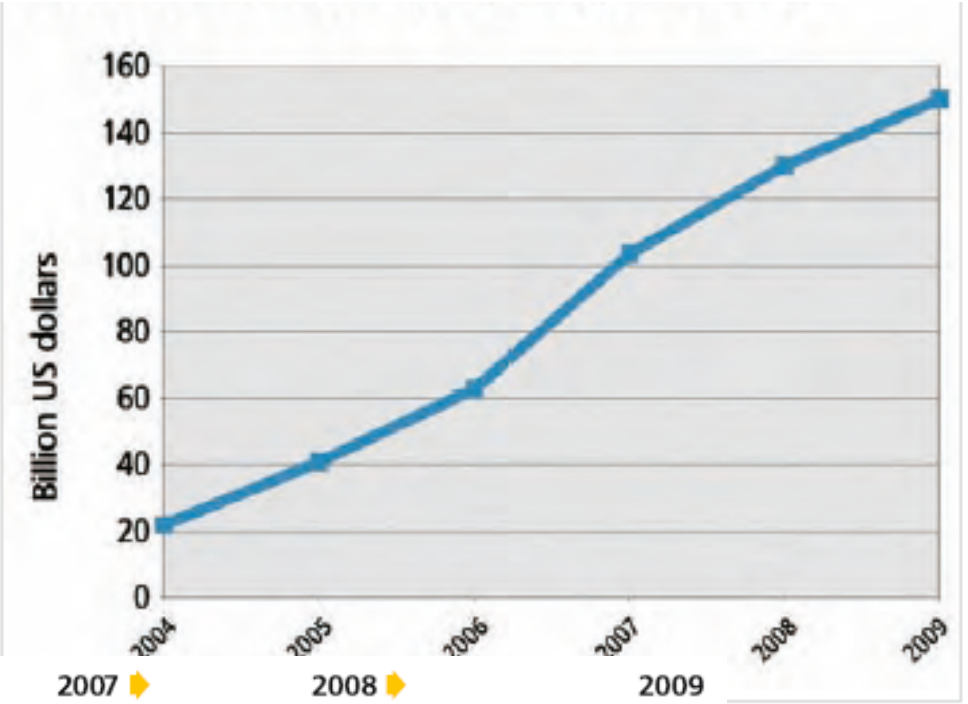
Snapshots from REN21 report – Strong Renewables Growth

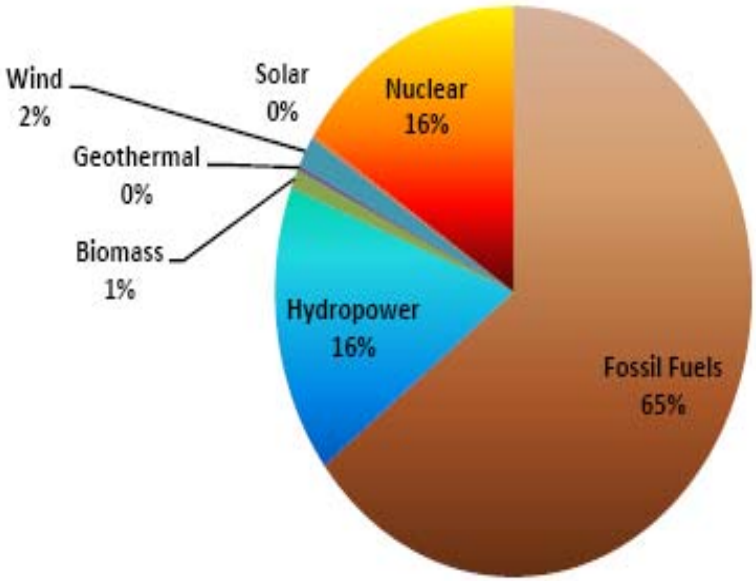
***REN 21 Global Status Report 2010:**
www.ren21.net/globalstatusreport/



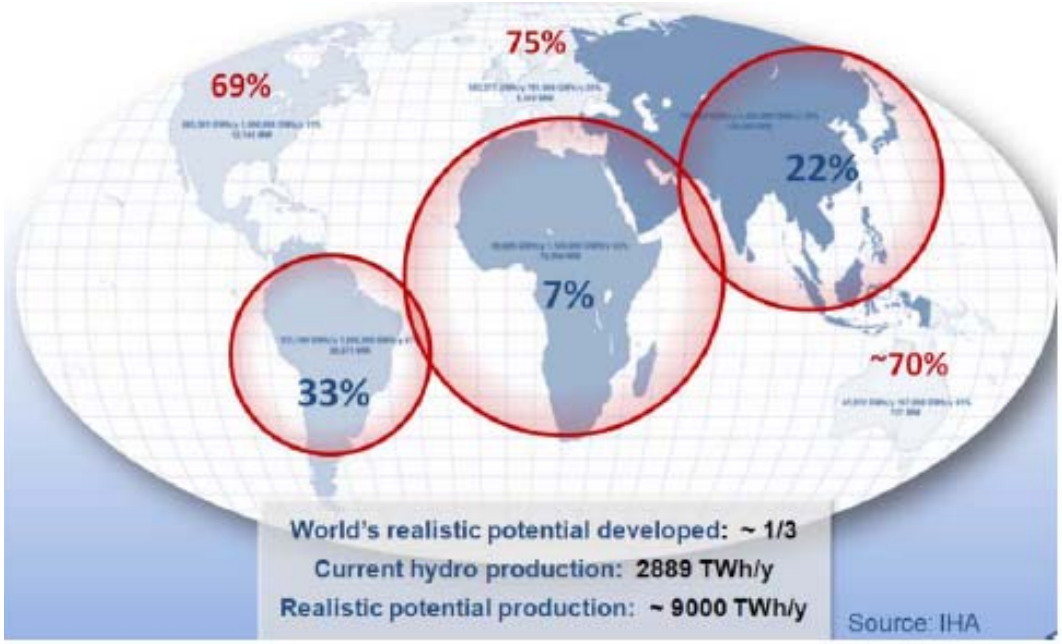
SELECTED INDICATORS	2007	2008	2009
Investment in new renewable capacity (annual)	104	130	150 billion USD
Renewables power capacity (including only small hydro)[1]	210	250	305 GW
Renewables power capacity (including all hydro)	1,085	1,150	1,230 GW
Hydropower capacity (existing, all sizes)	920	950	980 GW
Wind power capacity (existing)	94	121	159 GW
Solar PV capacity, grid-connected (existing)	7.6	13.5	21 GW
Solar PV production (annual)	3.7	6.9	10.7 GW
Solar hot water capacity (existing)	125	149	180 GWth

Hydropower – Global Potential

- World Summit on Sustainable Development 2002 *Plan of Implementation - hydropower should be included in the drive to increase the contribution of renewable energy throughout the world*



Source: IEA 2008



Source: World Atlas of Hydropower & Dams, 2002; IHA

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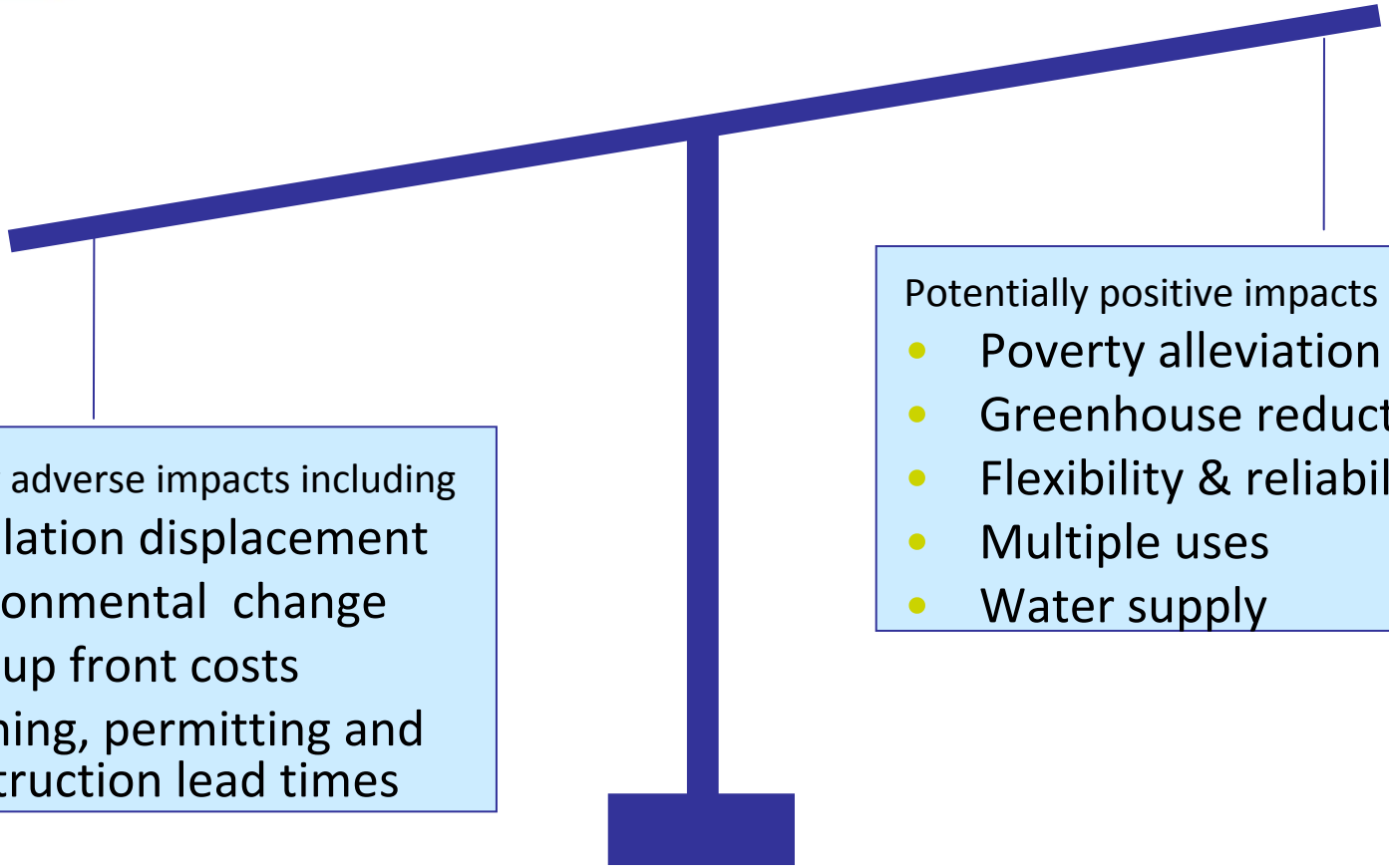
Hydropower and the Sustainable Development Challenge



Potentially adverse impacts including

- Population displacement
- Environmental change
- High up front costs
- Planning, permitting and construction lead times

Potentially positive impacts including

- Poverty alleviation
- Greenhouse reduction
- Flexibility & reliability
- Multiple uses
- Water supply

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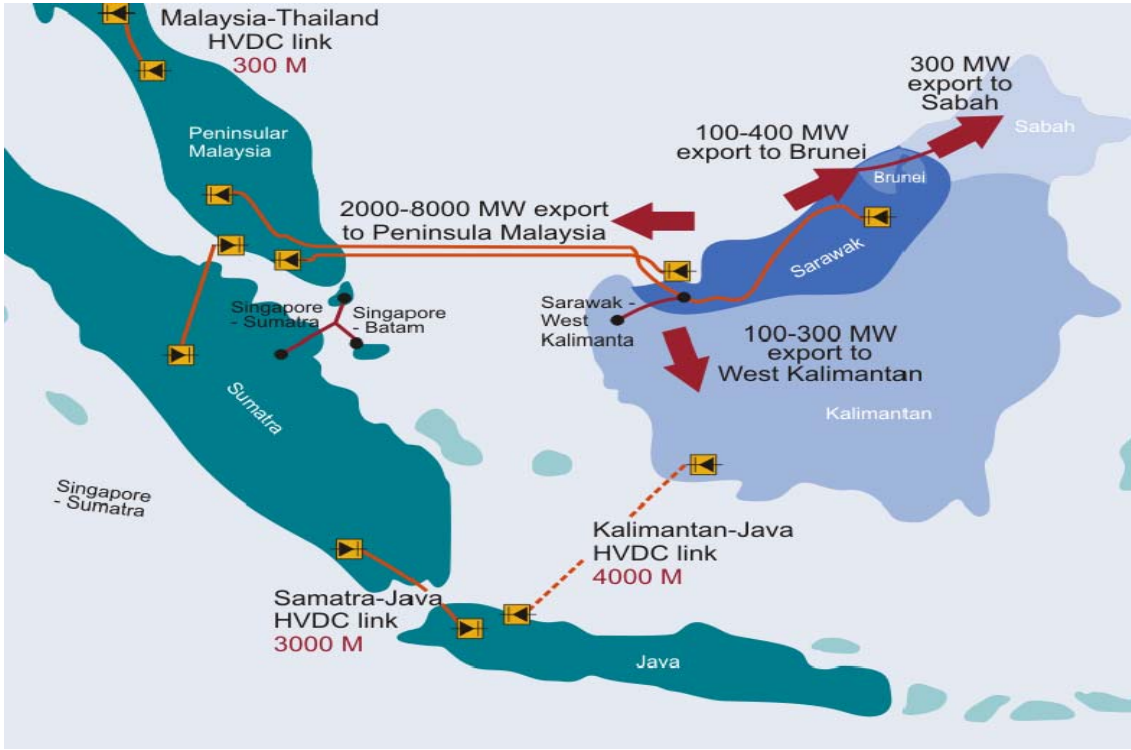
Source: Adapted from IHA, Helen Locher HSAF 2009-10

Sarawak A Regional Case Study - Sarawak Corridor of Renewable Energy (SCORE)

- **30 year strategic development plan** for optimal utilisation of natural energy resources.
- Plans to develop a long term hydro power system of 20,000 MW, consisting of over 50 sites to provide 87,000 GWh of energy.
- Endorsed by the Malaysian Federal Government and being implemented by the State Government of Sarawak.
- Sarawak has 70% of Malaysia's total exploitable hydropower potential, due to its abundant rainfall and favourable topography.
- Plans to achieve a balanced generation mix of 70% hydropower, 20% coal, 2% gas and less than 10% other renewables.
- Currently Sarawak has approximately 100 MW of hydropower installed, with another 3,344MW under construction.



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PART II

Energy Poverty, diesel alternatives: Bass Strait islands Renewable Energy Integration case study

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Energy poverty - WEO 2010 pre-release*

- IEA, UNDP, UNIDO World Energy Outlook 2010 pre-release focus on energy poverty notes among other things:
  - today there are 1.4 billion people around the world that; lack access to electricity
  - **…a new financial, institutional and technological framework is required , as is capacity building in order to dramatically scale up access to modern energy services at the local and regional levels….**
- We need to refine and deploy solutions to move away from traditional biomass and diesel systems
- Off-grid RAPS are a step forward Hydro Tasmania believe in - the Bass Strait approach demonstrates available technologies can work:
  - Portfolio of innovative new and existing renewable energy technologies
  - Globally unique opportunity to demonstrate the integration of a portfolio of renewable generation, with enabling and smart grid technologies

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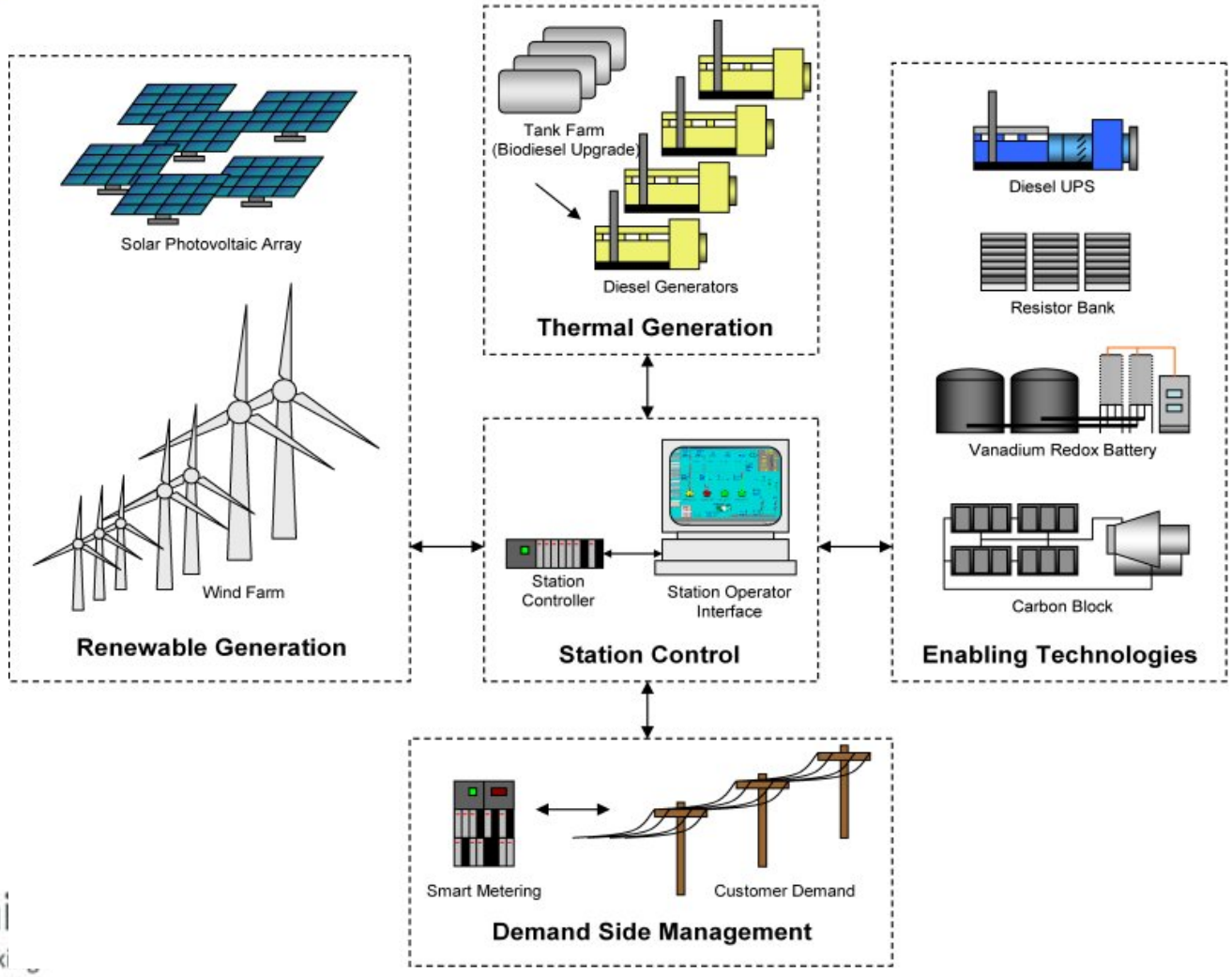
*Source IEA 2010, http://www.worldenergyoutlook.org/docs/weo2010/weo2010_poverty.pdf

King Island system



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King Island – current status

Wind

- 2 Vestas V52 wind turbines
  - 850 kW output
  - 60 metres tall
  - Rated wind speed of about 50 km/hour
  - 52 metre rotor diameter
- 3 Nordex N29 wind turbines
  - 250 kW output
  - 29 metres tall
  - Rated wind speed of about 50 km/hour
  - 29.7 metre rotor diameter

'Any Interested Partners Are Welcome To Come And See Our Approach'

Vanadium Redox Battery (VRB)

- 68 000 litres of electrolyte contained in four plastic tanks
- Six Sumitomo cell stacks
- Energy storage of 200 kW for four hours
- Peak short-term output of 400 kW

Solar

- Six SOLON Movers manufactured by SOLON AG, total rated power of approximately 100 kW
- Each Mover is capable of producing up to 16 kW in full sun conditions
- Precise 2-axis tracking of the sun to maximise power production
- Capable of withstanding strong winds by stowing away into 'locked' position

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Thankyou

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