



Centre for Science and Environment
ANIL AGARWAL DIALOGUE
**ENERGY ACCESS &
RENEWABLE ENERGY**
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ENERGY ACCESS AND RENEWABLES: IS A LEAPFROG POSSIBLE?



Background: our interest

- 1980s: Advisory Board on Energy
- Concern was energy poverty
- Human face of firewood crisis known
- Solutions were everything – from extension of grid to renewables (improved stoves; biogas; biomass gasification, afforestation etc). **Was tried. Was Tested**



30 years later: Energy Poverty continues

- ❑ Grid reaches more households; but supply is unreliable; unavailable in many parts
- ❑ Census 2011: 31% use kerosene for lighting
- ❑ Firewood remains primary source of fuel for cooking in rural India; In 20 years only 2% reduction in number of total rural households using biomass for cooking
- ❑ **Unacceptable. Energy is power**



30 years later: New challenges

- Climate change concern driving world to cleaner fuels
- So renewed interest in renewables
- But cheaper (relatively cleaner) fuels like shale and natural gas are growing, particularly in US
- Even grid-connected energy rich countries are talking of energy poverty – where households spend more than 10% of income on electricity and power – because of investment in expensive energy options
- There is a slow-down in renewable energy investment
- **Is this the end. Or the real beginning?**



Our imperative

- Need to reach energy to large numbers
- Need to deal with crippling health burden
- Can we do the **difficult** – take relatively expensive sources of energy and provide light and cooking to the poorest in the country?
- **Possible?**



The great leapfrog

- Energy poor provide us option to leapfrog – use renewable sources today for cooking, but polluting. Can they use clean renewable sources tomorrow?
- Can they avoid the fossil fuel route?
- Can we combat challenge of local, global pollution and provide energy to all?
- Need to reinvent how and what we do with renewables? **How we think?**



Renewable re-think

- Grid based renewable – solar or wind – provides energy to the already energy-rich
- Can we rework completely so that we use renewables for energy access?
- **Not cheap. Not easy to scale-up.** All models currently are local, small and difficult to implement
- So how can we make this energy revolution possible?



Scale-up small for large gains

- Re-think principles for **large-scale** access of energy
- **Not cheap**. Use power of market for reach. Work with instruments of market like GBI or feed-in-tariff
- But ensure that energy is **priced** and paid for. Advantage of local systems is that reach and collection is possible
- Make systems **grid-interactive** – will be viable
- Re-work scale. Scale up for large gains



AAD: Dialogue for way ahead

- How can we get energy access to all?
- How can this be clean energy?
- What is the framework for mini-micro-grid policy?
- How will a million-roof programme best work?
- What is the best way to re-energize wind power?
- Should the next phase of the national solar mission be different? **How?**