



# 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?

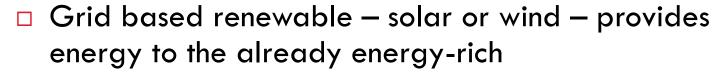


### The great leapfrog

- 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



- 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?

