Feed in Tariffs: A Time for Real Action on Renewable Energy

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Fair and Efficient FITs for Renewable Energy Sources Electricity (RES-E)

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Fairness and efficiency (1)

- **FITs must be based on the value of renewables**
- **They must be based on “cost + fair profit”**
  - And not on “avoided costs”, or on a “market referent” based on present lower fossil fuels based kWh cost
- **Measuring “Fair profit” only by IRR (Internal Rate of Return) is dangerous**
  - Profitability results not from IRR but from the difference between IRR and cost of capital (“WACC”)
- **Fine tuning easier from the « Profitability Index », the project Net Present Value (NPV) per $ invested :**
  - From success stories and failures: \(0.1 < \text{PI} (= \text{NPV} / I) < 0.3\)
    - PI < 0.1: non sufficiently attractive FITs, not sufficiently GWs/year and additional tens of TWh/year from investors
    - PI > 0.3: undue profitability and over-costs leading to market overheating and at the end to “stops & go”
Fairness and Efficiency (2)

- **Efficiency requires to deliver**
  - Increasing TWhs/year and % of electricity demand from RES-E
  - In order to decrease the part of non sustainable technologies

- **Medium (10 years) and long term (20 to 30 years) targets and scenarios must be defined and optimized**
  - TWh/year, % of electricity demand
  - Over-costs and benefits by blending
    - Low kWh cost RES-E technologies (onshore wind, hydropower)
    - Base load RES-E (geothermal power)
    - Dispatchable RES-E technologies: simple power plants and CHP systems using biomass and biogas with resource storage
    - Emerging RES-E technologies (PV, offshore wind)

- **Optimization requires detailed FITs by technologies, size, application (e.g. BIPV), quality of sites ("tiered tariffs")**
Fairness and Efficiency (3): tiered tariffs

- Creating a “Win-Win situation” (wind, PV)
  - For investors: minimum profitability on lower quality sites, increasing profitability on higher quality sites
  - For electricity consumers: FIT and over-costs decreasing on higher quality sites, not undue profitability on those sites

- Introduced in 2000 with a huge success by Germany for wind power, then France and Portugal

- Detailed proposals for wind: Ontario (not implemented), Pakistan (decision pending)

- Also possible and of high value for solar PV
  - Case studies in 2009 for 5 European countries
  - Detailed case study and proposal for California in 2010
  - In both cases, more simple for PV than for wind!

- Innovation is also possible for the design of simple, reliable, fair and efficient FITs!