Increasing the share of renewable energy in energy mix

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Contents

• Why RE and why create a plan
• Making sense of the options
• Process overview
Why buy Renewable Energy?

Because

• It can make economic sense
  • Fossil fuel based electricity would continue to get costlier

• You may need to comply with government policies
  • Renewable Purchase Obligations compliance will become stricter

• Business is more than just profits
  • You may have your own sustainability goals
  • With increasing consumer awareness Indian consumers will get more demanding – this has already been happening in the west.
The cost of going solar

State-wise industrial tariff (HT) vs LCOE of solar power (100 kW system, ₹/kWh)

This was in 2014

This is now
And why do it NOW!

• No subsidy is not a problem – if it makes sense even without subsidy, don’t keep waiting

• Expecting prices to continue falling through the floor? This is unlikely to happen, China has been trimming its overcapacity
But where to start?

• What does not work well
  • Ad-hoc piecemeal installations
  • Small capacity – pure visibility “show off” installations

• Start with energy audit
  • Helps collect/organize internal
  • Will optimize the RE investment by avoiding over capacity

• And then, prepare a RE plan for your company

“If it is not big, it is not worth doing”
- Randal Newton, Ingersoll Rand
Advantage of RE plan

• You can follow a strategy (broken into short, mid, and long term goals)

• Integrate RE capacity with demand – necessary for bottom line benefits

• Especially useful when your assets are distributed at multiple locations
  • Different states, different policies.
  • Internal team inertia would otherwise slow things down

• Demand aggregation would allow better negotiation and better pricing
Demand aggregation for GoI – 500 MW

All data entries (text, images) for each site get uploaded on to the cloud server database with a unique site-ID or serial number.

All relevant site information is entered in an online form at the time of site visit.

Basic site info (address, GPS, etc.)
Site details (accessibility, layout)
Current connected load and annual electricity consumption
Evacuation arrangement
Roof details (orientation, slope, area availability)

IT-tool value proposition →
✓ Saves time
✓ Saves cost
✓ Improves data management

Server

Data can be viewed / downloaded / edited accordingly by user.

2400+ sites analysed within 4 months

Site-wise analysis for subsequent tasks (e.g. regulatory constraints on system size, generation, etc.) can be incorporated into the IT-tool by way of formulas operating on data entry fields.
Options for increasing RE share

- Options
  - With electricity
    - Third party owned
      - Your site – RESCO
      - Other site - PPA
    - Owned by you
      - Your site - CAPEX
  - Without electricity
    - REC
    - Other site – Open access
What does a good RE plan entail

• Location-wise assessment – potential, suitable technologies, feasibility, benefits, policies and regulation, financing options
• Benefits across large impact, high visibility, and integration with CSR
• Overall implementation schedule – short, mid, and long term
• Mode of implementation (EPC/BOO/PPA models)
• Identification of critical bottlenecks, risks & enablers, and blind-spots etc.
• Identification of implementation partners
• *Are you also helping your supply chain?*
Planning your RE plan

Ground Zero
- Post energy audit
- Set goals for RE plan – prioritize objectives, locations
- Assign location wise PoC

Baseline
- Location wise demand data collection
- Resource mapping, technology options, policy analysis

Techno-economic analysis
- Analyse the available feasible options and shortlist the ones above your threshold

Implementation model analysis
- Business model comparison (EPC/BOO/PPA)
- Consider critical bottlenecks, risks & enablers, and blind-spots

Final plan
- Take into account scale, impact and visibility
- Classify as short, mid, long term
What follows the plan?

• Connecting with implementation partners
• Tendering
• Due diligence and negotiations
• Contracting
• Communications and outreach
• Performance measurement
RE Roadmap for a steel company

Don’t forget floating solar
Common pitfalls in planning

• Mostly due to lack of experience and short-term thinking

• For example - Mapping solar potential
  • Water availability at site
  • Rooftop accessibility – required for O&M
  • Any upcoming construction near the site
  • Inadequate cumulative direction analysis

• Important that your team (internal or external) is well aware of end to end project cycle
Creating impact – Magarpatta City

The 2018-19 Sustainability report of Magarpatta City, Pune was awarded as “Asia’s Best First Time Sustainability Report” by Asia Sustainability Reporting Awards.
What TERI can do?

• Help you navigate through policy and regulatory processes
• Strategize and prepare a RE implementation plan
• Implementation advisory
  • Tendering & finding right partners
  • Handholding during contracting and negotiations
• Third party independent performance validations
Thank You!

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