Energy Transitions in Practice
The work of the Regulatory Assistance Project

Beyond oil: mobilizing alternative futures Conference

Ranjit Bharvirkar
India Program Director
The Regulatory Assistance Project (RAP)®

Berkeley, California
United States

+1 510 508 7671
rbharvirkar@raponline.org
raponline.org
Outline

• Key developments in the energy sector – specifically, in the context of the power sector
  • Wholesale
  • Retail
• Practitioner’s perspective on how to drive transitions
Wholesale

- Larger markets
- Faster markets
- Markets that ensure creation of sufficient and appropriate capability
- Existing institutions can handle these transitions
Retail

“Behind-the-meter” Model
- Many providers
- Full ownership
- Full customization
- Onsite
- Relatively low externalities
- High innovation
- No variable costs

Possible Choice in Future?

Values (?)
- Low Cost
- Clean/Green
- Resilient
- Ownership/Control
- Innovative
- Modular/scalable
- Onsite

Only Choice Now!

Existing Grid/Utility Model
- Monopoly provider
- No ownership
- No customization
- Remotely located
- Negative externalities
- Limited innovation
- Volatile variable costs
Shift in Core Decision-making Process

- Centralized
  - Policymakers, industry
  - Homogeneity in attributes
  - Societal
- Decentralized
  - Millions of customers
  - Heterogeneity in attributes
  - Individual
Transitions are neither linear...
CONSUMPTION SPREADS FASTER TODAY

Source: Nicholas Felton, 2008
http://www.nytimes.com/imagepages/2008/02/10/opinion/10op.graphic.ready.html
... nor predictable
Learn to live with uncertainty
“When you **solve** a sufficient number of **problems**, you get to come home”

— *from the movie “The Martian”*
“When you **solve** a sufficient number of problems, you get to come home”

—*from the movie “The Martian”*

“**When you convince** a sufficient number of people, you achieve the energy transition”
Solve THEIR problems
Overall Governance Structure

**US**
- Democratic system
- Universal suffrage
- Constitution
- Federal structure
- Three equal branches of government at national and state levels
  - Executive
  - Legislative: Two houses
  - Judiciary

**India**
- Democratic system
- Universal suffrage
- Constitution
- Federal structure
- Three equal branches of government at national and state levels
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# Electricity Regulatory Framework

## US
- Federal
  - Department of Energy
  - Federal Energy Regulatory Commission
    - Inter-state trade of electricity
- States
  - State Energy Commissions
  - State Public Utility/Service Commissions
    - Intra-state trade of electricity

## India
- Centre
  - Ministry of Power + Coal + RE
  - Central Electricity Regulatory Commission
    - Inter-state trade of electricity
- States
  - State Energy Departments
  - State Electricity Regulatory Commissions
    - Intra-state trade of electricity
US

- Universal electrification
- Reliable grid – low/no outages
- Relatively (with respect to per capita income) low cost of electricity

India

- 300 million people still don’t have access to electricity AT ALL
- Unreliable grid – black-outs (scheduled and unscheduled) are routine
- Relatively (with respect to per capita income) high cost of electricity
“It’s the economy, stupid!”
- James Carville, 1992 Bill Clinton Presidential Campaign
“It’s the economy, stupid!”

--James Carville, 1992 Bill Clinton Presidential Campaign

It’s NOT JUST about energy, stupid!
Broader State Political Economy

- **Electoral politics**: electoral competition, political salience of electricity, strength of unions
- **State finances**: fiscal space (e.g., per capita income, GSDP, debt etc.)
- **Structure of economy**: level of development, sectoral characteristics, rural/urban divide, population density
- **Environmental issues**: air quality, water resources, natural resources
- **Non-power sector interventions** in agriculture, transport etc.

State Political Economy of Power

- **Demand for Service Quality**
  - Access
  - Quality
- **Available Financial Space**
  - Load profile: ratio of above-cost-paying to below-cost-paying consumers
  - State subvention

Reforms

- **Regulators**
- **Privatization**
- **Franchisees**
- **Internal/managerial**
- **Feeder separation**
- **Public participation**
- **Rural Electrification Schemes**
- **Bailouts**
- **Renewable Portfolio Obligations**
- **Electricity Act**

Cost of Supply

- Implicit
- Explicit

Demand for Subsidies

Outcomes

- 24*7 Service
- Financial Health
- Environmental Quality

Centre’s Interventions

- Environment & Geopolitics
- Centre-state politics
- Central schemes
- Reform ideas
- Non-power sector interventions in agriculture, transport etc.
Know the ecosystem
Regulatory Assistance Project (RAP)®

**Issue/Topic, State-specific context, Stakeholder Mapping, Windows-of-Opportunity, Etc.**

- **GOAL**
  - Universal
  - Affordable
  - Reliable
  - Clean

- **Issues**
  - Operational
  - Wholesale/Supply-side
  - Retail/Demand-side
  - Inter-sectoral

- **Enabling Conditions**
  - Governance: Transparency, Accountability, Participation, and Capacity
  - Political Will
  - Innovation
  - Consensus among non-governmental actors

- **Activities**
  - Data/information collection, dissemination
  - Analysis
  - Communications
  - Engagement with venues and processes
  - Implementation support
  - Collaboration
  - Convening of stakeholders
Equally important – know what role you play in that ecosystem
Always look out for and then take advantage of a “Window of Opportunity”
“Horses for courses”
“Don’t bring a knife to a gunfight”
BOTH – the Message and the Messenger – are EQUALLY important
Always keep the ULTIMATE objective in your mind
The end doesn’t always justify the means
About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org