Simulating the changing Electrical consumption patterns and rebound effect: A foresight scenario for 2050

Deepak Singh,

Centre for the Studies in Science Policy,

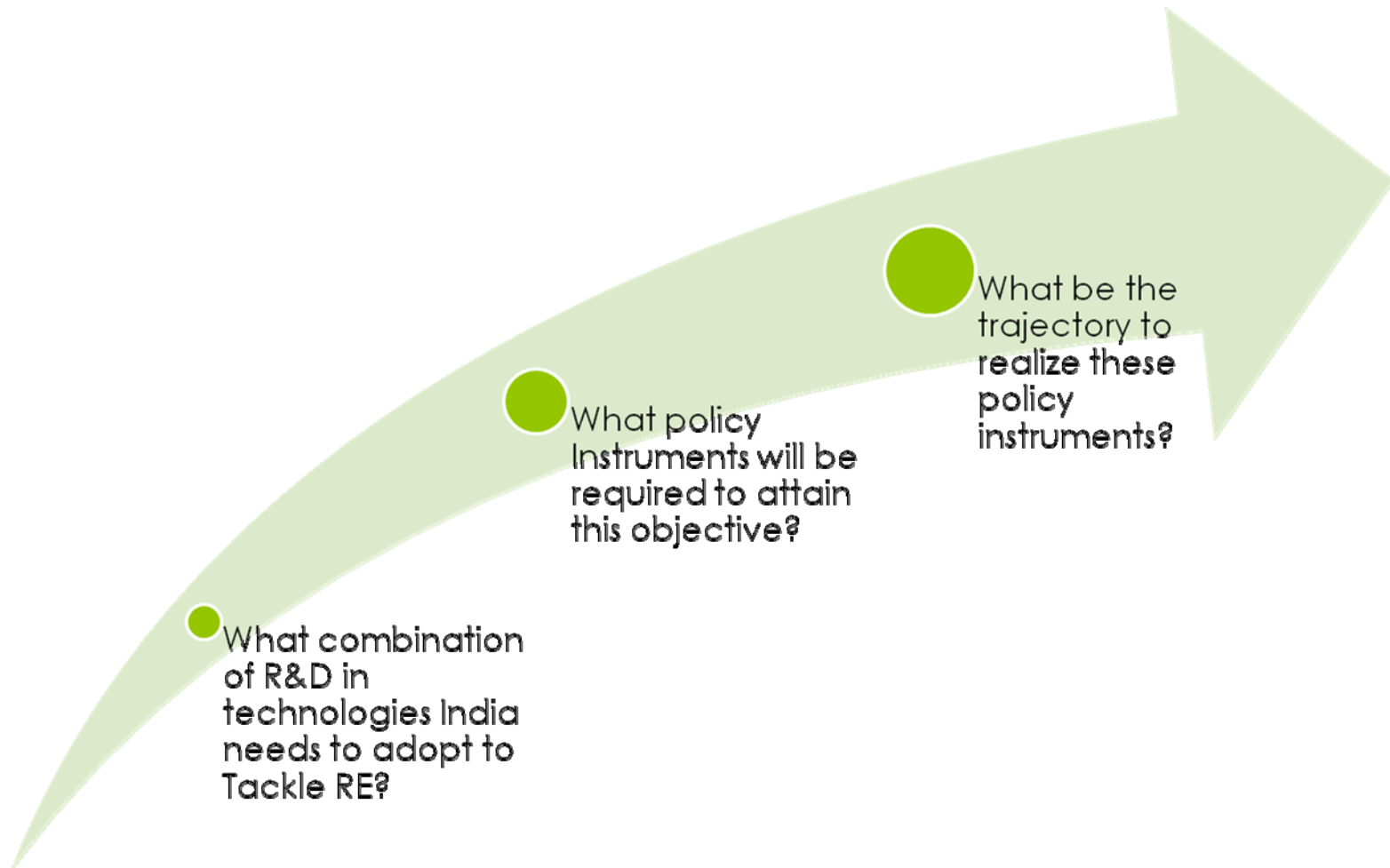*Jawaharlal Nehru University, New Delhi.*

Outline of this study

- Introduction to the basic concepts that How the consumption of Electrical & Electronic Devices and their Efficiency reacts paving way to Rebound Effect.
- A brief review of Literature and gap in it.
- Methodology of study.
- Analysis of Field Study.
- A priority matrix as a result of Brainstorming Exercise.

Literature Review

S.No	Author	Findings
1.	Wigley,1997	Defining RE
2.	Difiglio, 2000	Effect of various sources on RE.
3.	Grubbs, 2001	Significance of RE w.r.t its size.
4.	Greening, 2005	Importance of Design w.r.t time and it's Policy Implications.
5.	Brookes, 2007	Economic effect of RE.

Gap in the Literature

What combination of R&D in technologies India needs to adopt to Tackle RE?

What policy Instruments will be required to attain this objective?

What be the trajectory to realize these policy instruments?

Methodology

- Different zones viz. high income posh areas and low income, unorganised areas were identified in key Million Plus and Even smaller upcoming cities as follows:

S.No	City	Posh	Unorganised
1.	New Delhi	Green Park	Munirka
2.	Mumbai	Colaba	Santosh Nagar
3.	Bangalore	BTM	Yeshwantpur
4.	Bhopal	Shamla Hills	Sultania
5.	Patna	Kankarbagh	Phulwarisharif
6.	Varanasi	DLW Area	Gandhinagar

Inferences-1 For Million Plus cities

Profile	High Income Group	Low Income Group
RE	RE Very High	RE even more
Motivation	Aware but have no incentives to control	Clueless that this can even impact
Politics	Vote Bank & Political Sensitivity	
Danger of Local Knowledge	Not high as they don't buy generic or tampered items	Major issue

Inferences-2 For Smaller cities

Profile	High Income Group	Low Income Group
RE	RE pattern similar to low income groups of bigger cities but slightly higher in the value.	RE not significant
Motivation	Clueless that this can even impact	
Politics	Vote Bank & Political Sensitivity	
Danger of Local Knowledge	Not high as they don't buy generic or tampered items	

Results from the workshop and the brainstorming session[*] m

1. DSM
2. Decentralised/Off-grid
3. Renewable as an Epicentre
4. LRS (Large Rnw Syt)
5. Business Environment
6. Tech Transfer Agreement
7. Mandatory High Efficiency Standards (Buildings, devices, etc.)
8. Trg of HR
9. Centralised LRS
10. Integrated Smart Grids
11. Hi-Storage Batteries.
12. Indigenous Manufacturing Standards.
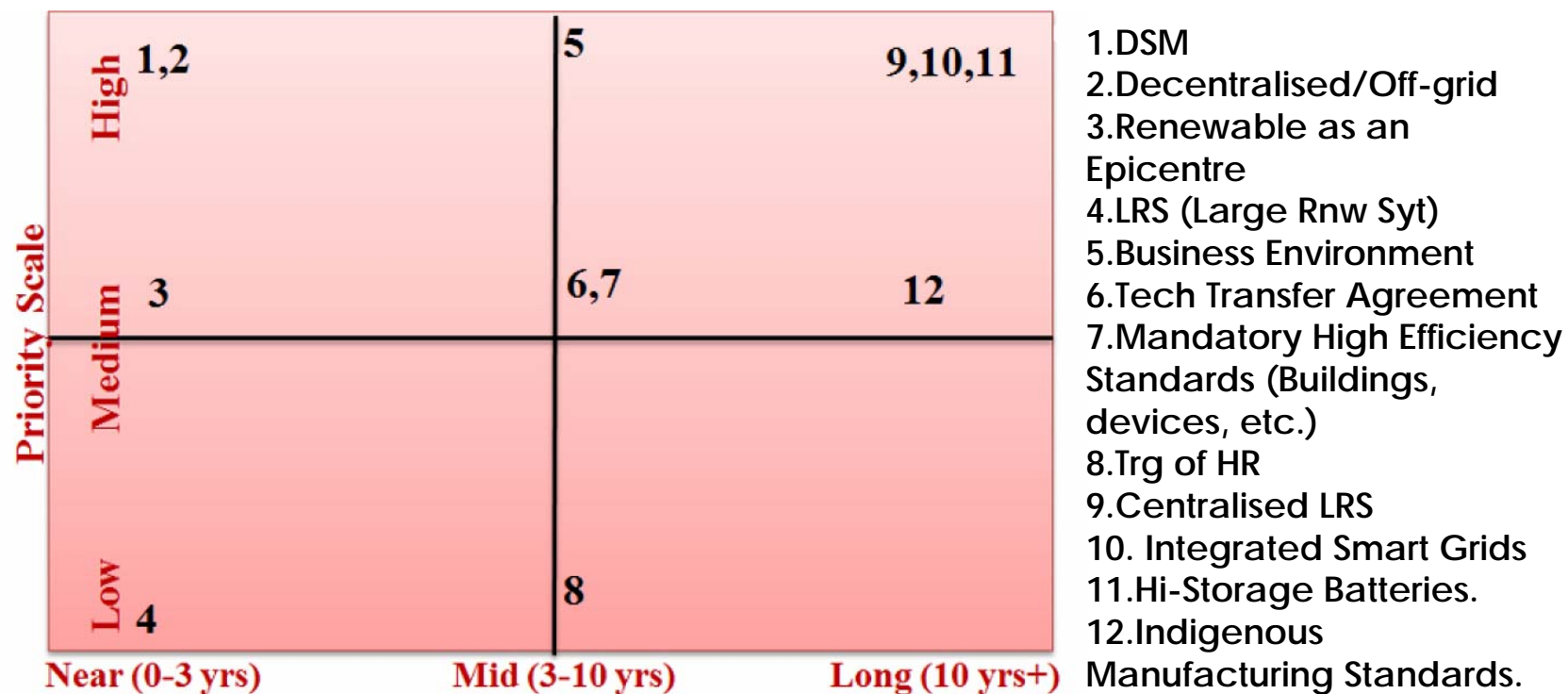
[*]Indo-German Workshop on changing urban lifestyles and mitigating climate change from Nov 13-14, 2011.
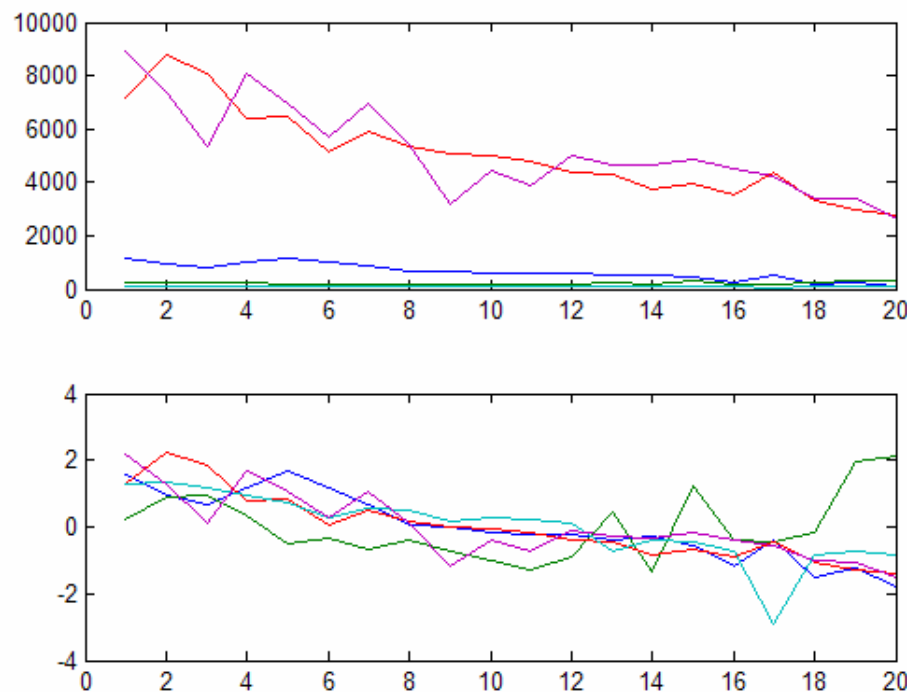
Results from Simulation

Fig 1. Explains if we implement all the recommended strategies.(Abscissa represents Years and Ordinate is for units)
Fig 2. If nothing is done and market let the industry run on its own course (Abscissa represents Years and Ordinate is for % change).

Conclusions and future riddles

- Estimates say CC temp rise by 2030 will be 2 degrees.
- Therefore more food, water, appliances to realize that.
- This shall be adding more complexity to already complex prob.