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Deutsches Institut für  
Entwicklungspolitik

German Development  
Institute

# When do local content requirements make sense?

Lessons from India's National Solar Mission

Oliver Johnson

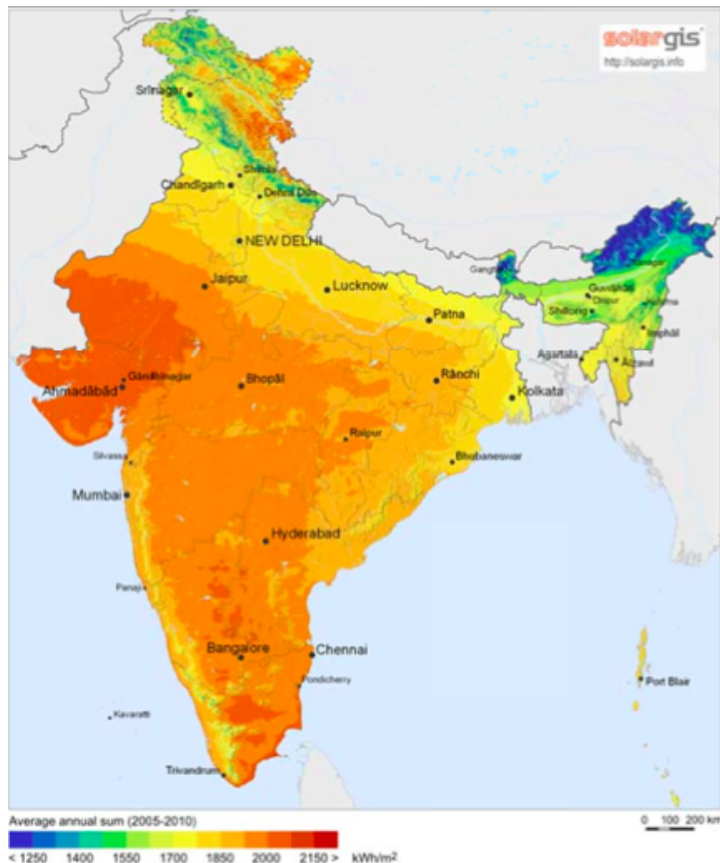
UNCTAD Ad-hoc Expert Group Meeting

*Geneva, 13 June 2013*



- **Political perspective:** inclusion of socioeconomic goals (i.e. jobs) is important to get buy-in to renewable energy strategies
- **Inclusive development perspective:** green growth pathways must generate opportunities for people to move out of poverty
- **Historical perspective:** prior to a global trade regime, many advanced economies built up competitive advantage through protectionist policies
- We need to move from 'if' to 'when'
  - Under which conditions are LCRs an effective policy tool for building a competitive local manufacturing industry?

# Jawaharlal Nehru National Solar Mission (NSM)



“We will pool our scientific, technical and managerial talents, with sufficient financial resources, to **develop solar energy** as a source of abundant energy to **power our economy** and to **transform the lives of our people**. Our Success in this endeavour will **change the face of India**. It would also enable India to help **change the destinies of people around the world.**”

Source: Prime Minister Singh in GoI/MNRE (2010)

# Main goals



## **DEPLOYMENT**

*climate change, energy security*

## **MANUFACTURING**

*jobs, economic development,  
long-term competitiveness*

*Source: GoI/MNRE(2009)*

# Goals of the NSM



## DEPLOYMENT

*climate change, energy security*

**Policy  
aim**

20GW grid-connected solar  
energy by 2022

Grid parity by 2020

## MANUFACTURING

*jobs, economic development,  
long-term competitiveness*

4-5GW manufacturing capacity  
by 2020

*Source: GoI/MNRE(2009)*

# Goals of the NSM



## DEPLOYMENT

*climate change, energy security*

## MANUFACTURING

*jobs, economic development,  
long-term competitiveness*

### Policy aim

20GW grid-connected solar energy by 2022

Grid parity by 2020

4-5GW manufacturing capacity by 2020

### Policy tool

**Auction-based feed-in tariff** to foster deployment of grid-connected solar:

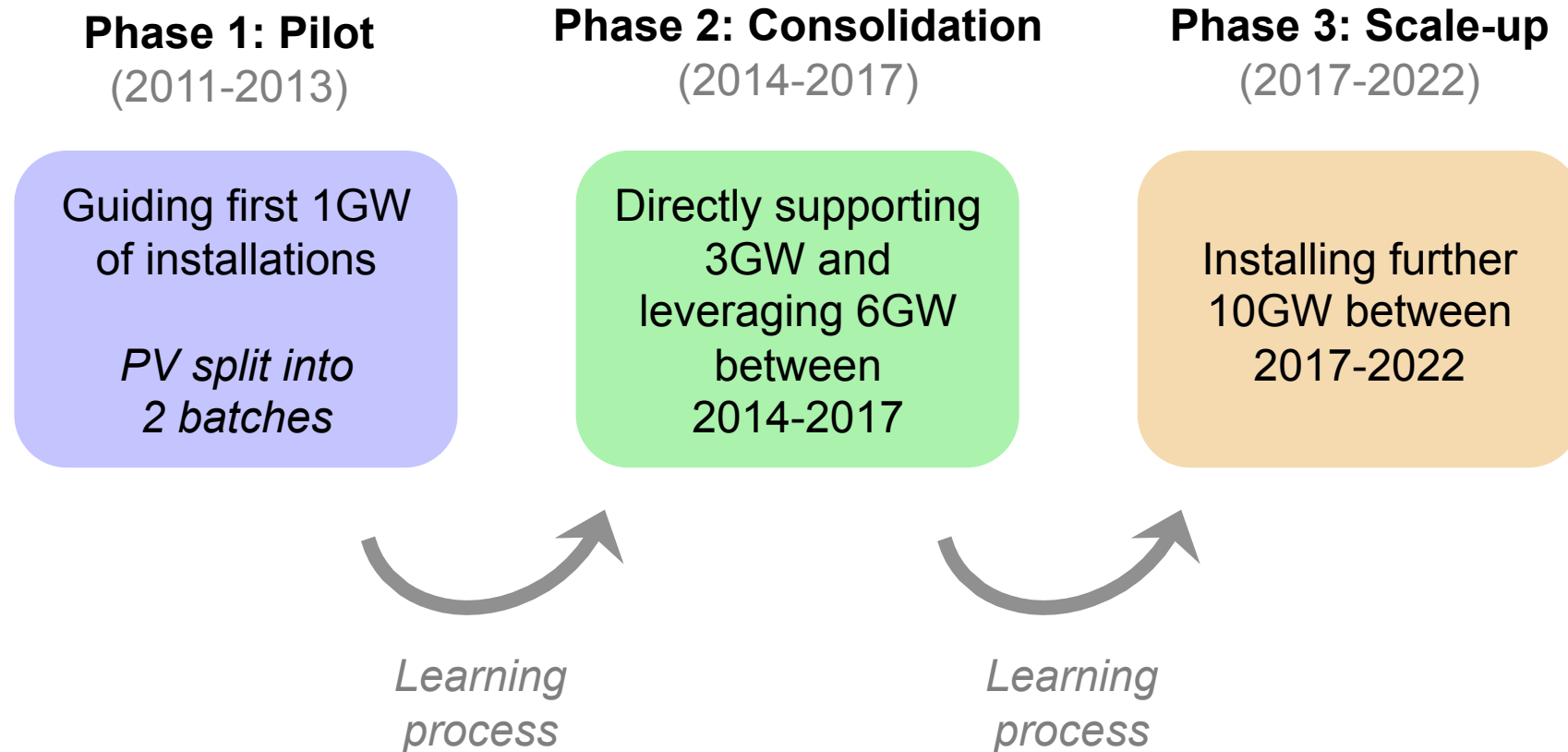
- 1 GW by 2013
- 3GW by 2017

**Local content requirements** to promote local manufacturing:

- specific PV components
- share of CSP project

*Source: GoI/MNRE(2009)*

# Implementation of the NSM



# Local content requirements in Phase 1 of NSM



## Solar PV projects

**Crystalline silicon technology**

Batch 1: Modules

Batch 2: Cells and modules

**Thin film technology exempt**

## CSP projects

30% of local content in all installations





# Experience with LCRs in Phase 1 of NSM



## LCRs considered to have failed:

For PV, bias towards foreign thin film technology  
+  
falling export demand

- => 10-15% capacity utilization
- => Companies bankrupt or in debt
- => Many job losses
- => Manufacturers survived by diversifying or soaking up losses

For CSP, plants still delayed



# Experience with LCRs in Phase 1 of NSM



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## Although, it's not all bad news:

- PV deployment targets were reached
- Manufacturing capacity has increased
- Political commitment to local manufacturing is clear



# What explains the Indian experience with LCRs?



## Market size and stability

- Large
- New potential market was large, but competitive
- However, old market shrinking and business models had not changed

## Policy design

- Loop-holes
- Thin film exemption made it obvious choice developers seeking lowest cost
- US-EXIM bank finance exacerbated this choice

## Cooperation and financial incentives

- Existing
- Government understood problems for manufacturers and developers
- But many conflicting policies regarding promoting of local manufacturing

## Innovation potential

- Low
- Innovative potential decreasing as capacity utilization remains low
- In general, manufacturers were geared towards low-cost assembly

(Drawing on Kuntze and Moerenhout 2013)

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# Implications for other countries: When do LCRs make sense?



## 1. When there is **market demand**

- Implies linking with deployment strategies, such as feed-in tariffs
- Smaller countries may need regional cooperation to increase demand (utilize regional economic communities?)

## 2. When they are **limited in duration** and incorporate **planned evaluation phases**

- Should give local firms a 'protective space' to build capabilities, not just give them a free ride.
- Having scheduled evaluations means that the private sector are aware that changes may occur and plan accordingly

# Implications for other countries: When do LCRs make sense?



## 3. When they are **designed very carefully**

- Focus on technologies and components where there is realistic local potential and where global market entry barriers are manageable
- Set LCR at appropriate level so that it is achievable but also encourages firm development – this requires good dialogue with local and foreign private sector actors

## 4. When they are implemented in tandem with **additional mechanisms to support long-term development of capabilities**

- Support all stages of the value chain and wider services
- Additional mechanisms, such as training and promotion of business linkages, are necessary to support development of long-term capabilities (c.f. innovation system)



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**Thank you**

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