



# **BUILDING RESILIENCE FOR ADAPTATION TO CLIMATE CHANGE IN CHINA'S ENERGY SECTOR**

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# CHINA'S RESPONSES TO CLIMATE CHANGE: MAJOR EFFORTS

## Institutional

- 2008: CC Department, NDRC
- 2012: NCSC, NDRC

## Legislation

- Climate change
- Low-carbon

## Strategy

- National Strategy of Climate Change Adaptation (2013)

## Planning

- 13<sup>th</sup> Five-Year Plan
- Plans to 2017

## Pilots

- Regional carbon trading
- Low-carbon city



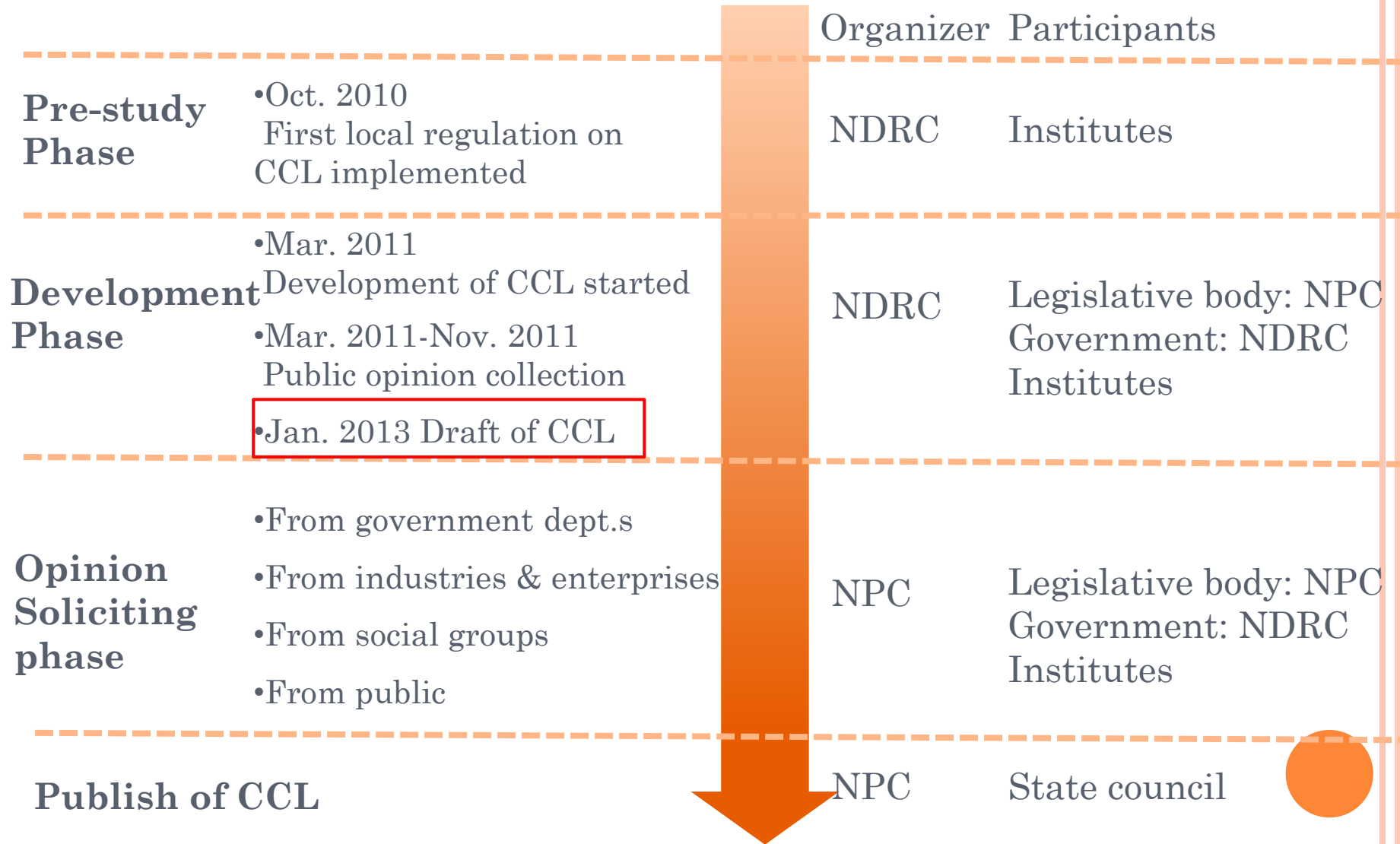
## POLICIES AND ACTIONS

### Enhancing the capacity of adaptation to climate change

- Study and formulate policies and measures allowing agriculture and forestry to respond to climate change, and guaranteeing food and ecological safety
- Rationally tap and optimize the allocation of water resources
- Enhance monitoring and protection of marine and coastal ecosystems, and increase the coastal areas' capacity to resist marine disasters
- Improve the emergency-response system



# CLIMATE CHANGE LEGISLATION (CCL) TIMETABLE



# DRAFT CLIMATE CHANGE LAW OUTLINE

Chap. 1 General Principles

Chapt.2 Management for  
Addressing Climate Change

**Chap. 3 Adaptation**

Chap.4 Mitigation

Chap. 5 Info., Edu. &  
Participation

Chap.6 International  
Cooperation

Chap.7 Incentives

Chap.8 Supervision &  
Enforcement

Chap.9 Legal Liability

Chap.10 Supplementary  
Provisions



# CHAPTER 3 CLIMATE CHANGE ADAPTATION

- **Part 1 General Provisions**

- Objectives and Significance
- Duty of People's Governments at All Levels
- Duty of Enterprises and Institutions

- **Part 2 Major Systems**

- Climate Change Impact Assessment System
- Major Climate Disaster Risk Assessment System
- Early Warning Capabilities
- Communication and Collaboration
- Financial Systems

- **Part 3 Key Sectors**

- Infrastructure
- Production
- Public Health
- Paroxysmal Disasters
- Biological Diversity
- .....



# ENERGY AND ADAPTATION: CHALLENGES

- **The National Strategy of Climate Change Adaptation (2013)**
  - jointly compiled by 9 agencies including the NDRC, Finance, Agriculture, Meteorological and Forestry ministries.
  - clarifies China's guiding ideology and principles in adapting to climate change.
  - instruct relevant departments in coordinating and making overall plans by setting goals and tasks, and putting forward supporting measures and regional structure projects.
  - considered "sectors": agriculture, coastal areas and resources, forests, health, and water.
  - **energy focus was on mitigation, not adaptation**

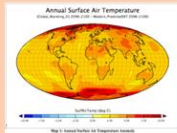
国家适应气候变化战略

二〇一三年十一月

# CLIMATE CHANGE IMPACTS ON ENERGY

## Climate Change

### Increasing Temperature



### Decreasing Water Availability



### Increasing Intensity and Frequency of Extreme Weather, and Sea Level Rise



## Energy Sector

### Thermal Power



### E-Grid



### Energy Demand



### Oil/Gas



### Renewables

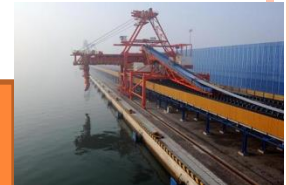


### Fuel Transport

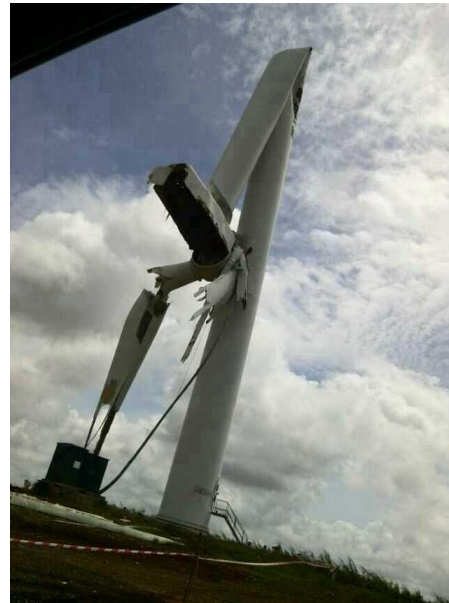




# VULNERABILITIES IN CHINA'S ENERGY SECTOR



# OBSERVED IMPACT

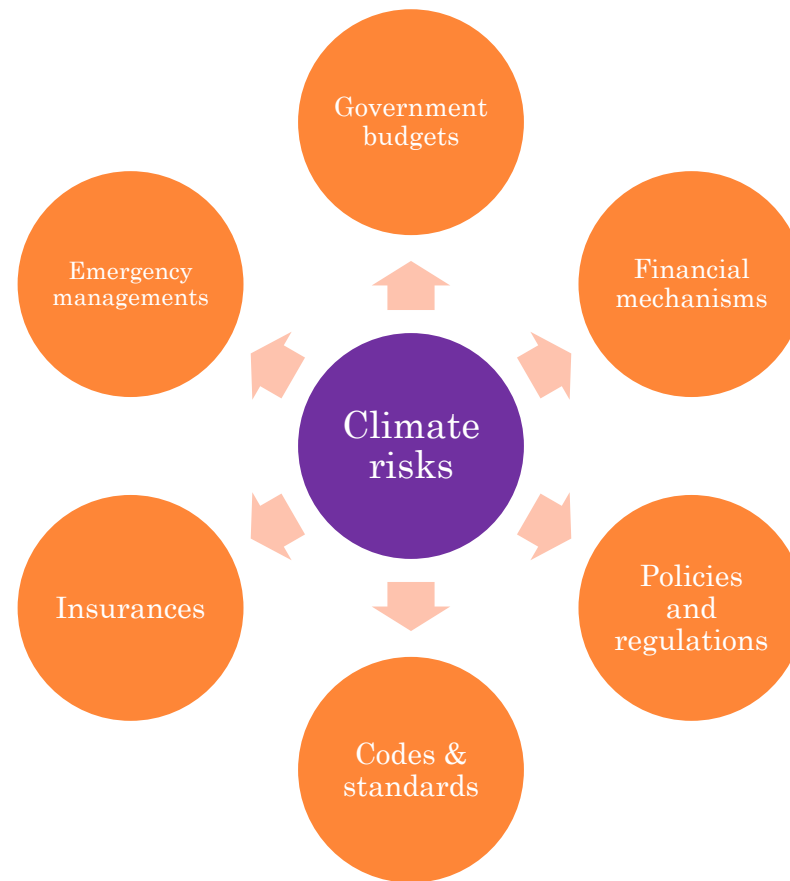


Super typhoon Rammasun batters China, July 2014

Yong Shi Wind Farm :13 blown down, 5 damaged



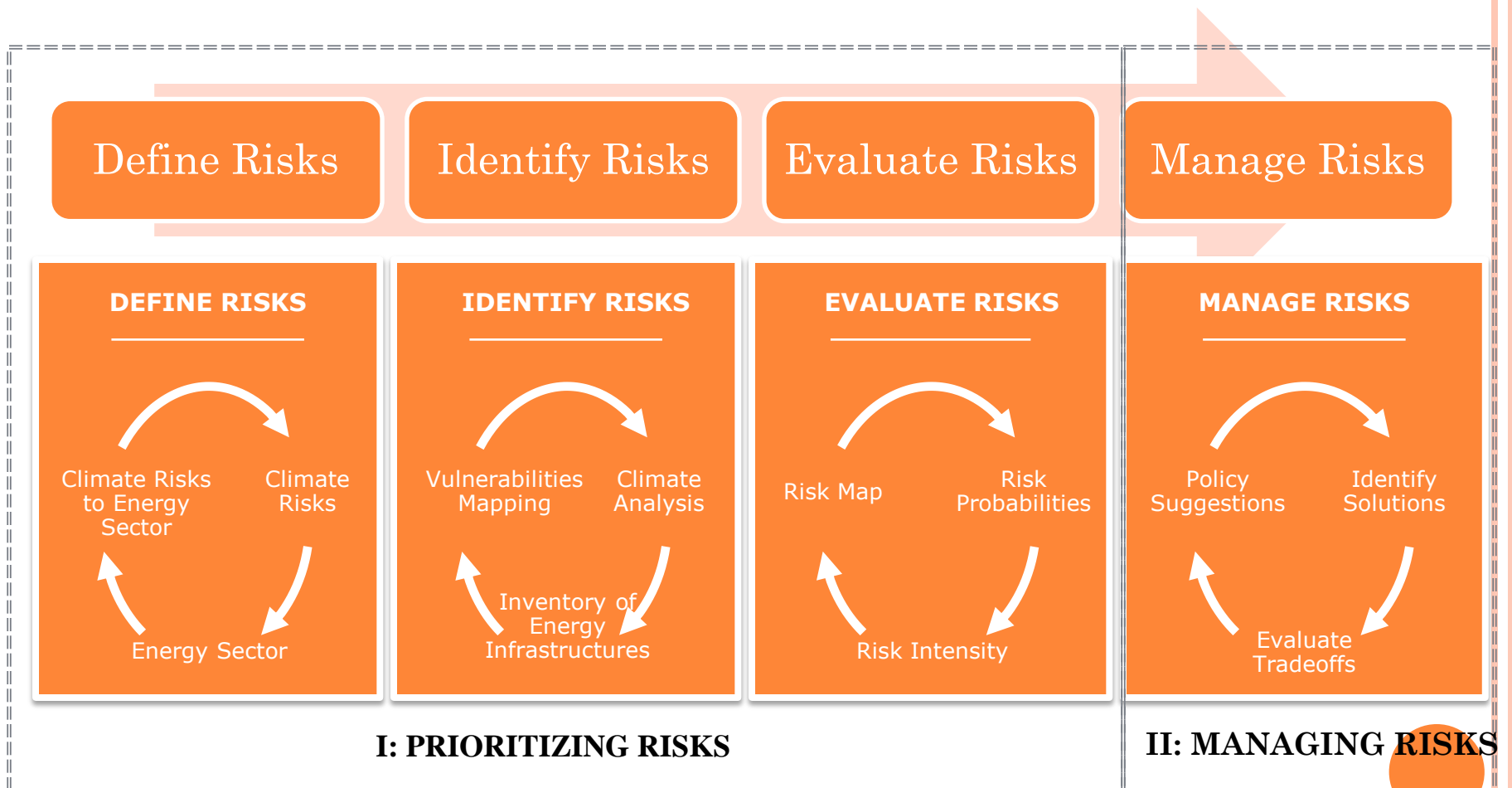
# VARIOUS ASPECTS RELEVANT TO CLIMATE RISKS



***The public sector needs to design and implement risk management framework that encourages prudent adaptation, while the private sector should incorporate risk assessment into capital expenditures and balance sheets.***



# RISK MANAGEMENT FRAMEWORK



# CONCLUSIONS

- The energy sector is affected by the physical impacts of climate change and must adapt.
- To improve the climate resilience of the energy sector:
  - the public sector needs to design and implement risk management framework that encourages prudent adaptation.
  - the private sector should take risk assessment as part of investment strategies.



**THANK YOU!**

