

# OVERVIEW OF THE PHOTOVOLTAIC TECHNOLOGY STATUS AND PERSPECTIVE IN CHINA

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# 1. Introduction

## ❖ Main propose of the paper

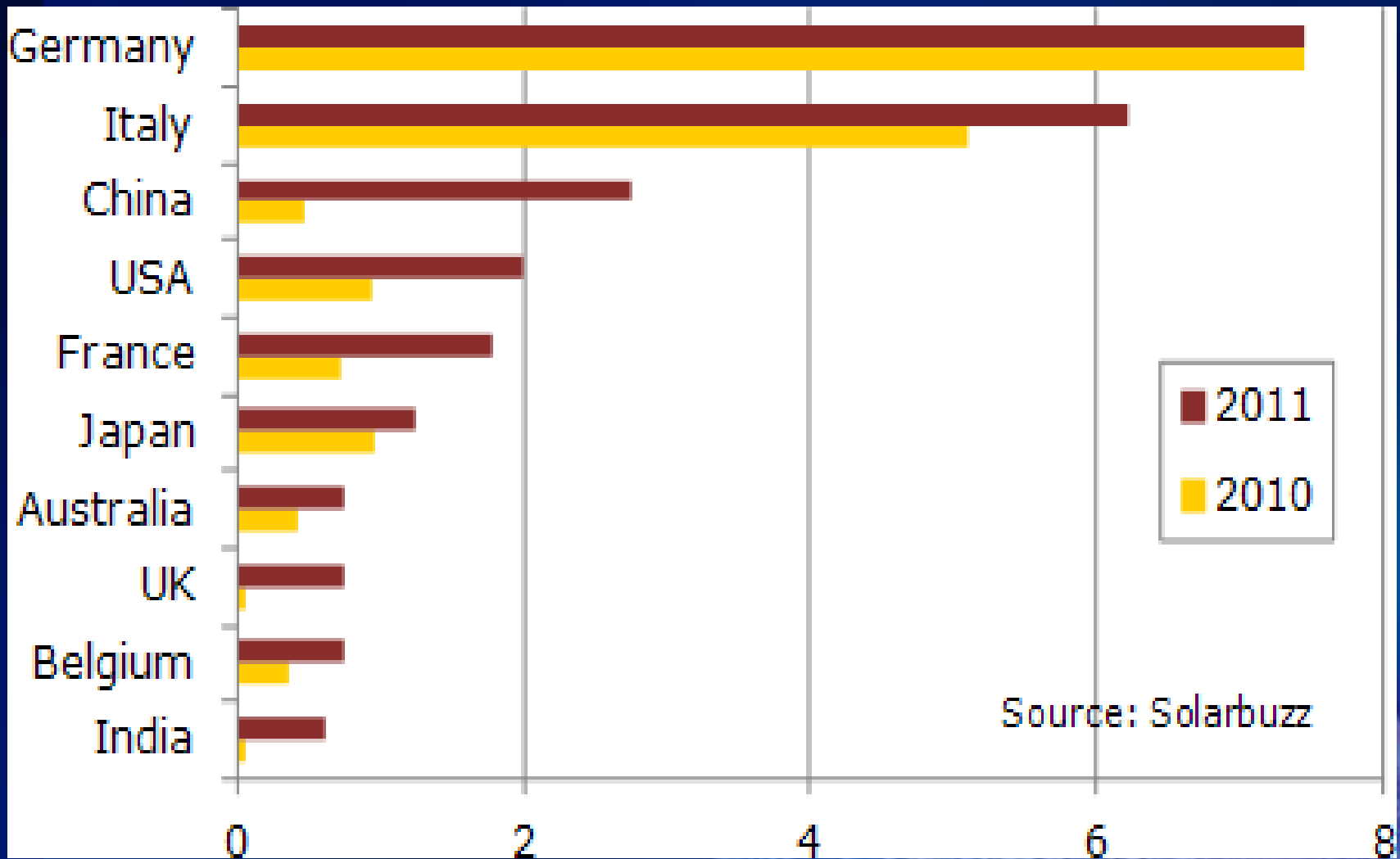
- The main purpose of this research is to investigate the legislature and policy development along with the industrial strategies which the China government has pursued in order to encourage development in the photovoltaic industry and also in related R&D. Finally, from manufacturing and designing an advantageous position, consider China's photovoltaic development strategy in the future.



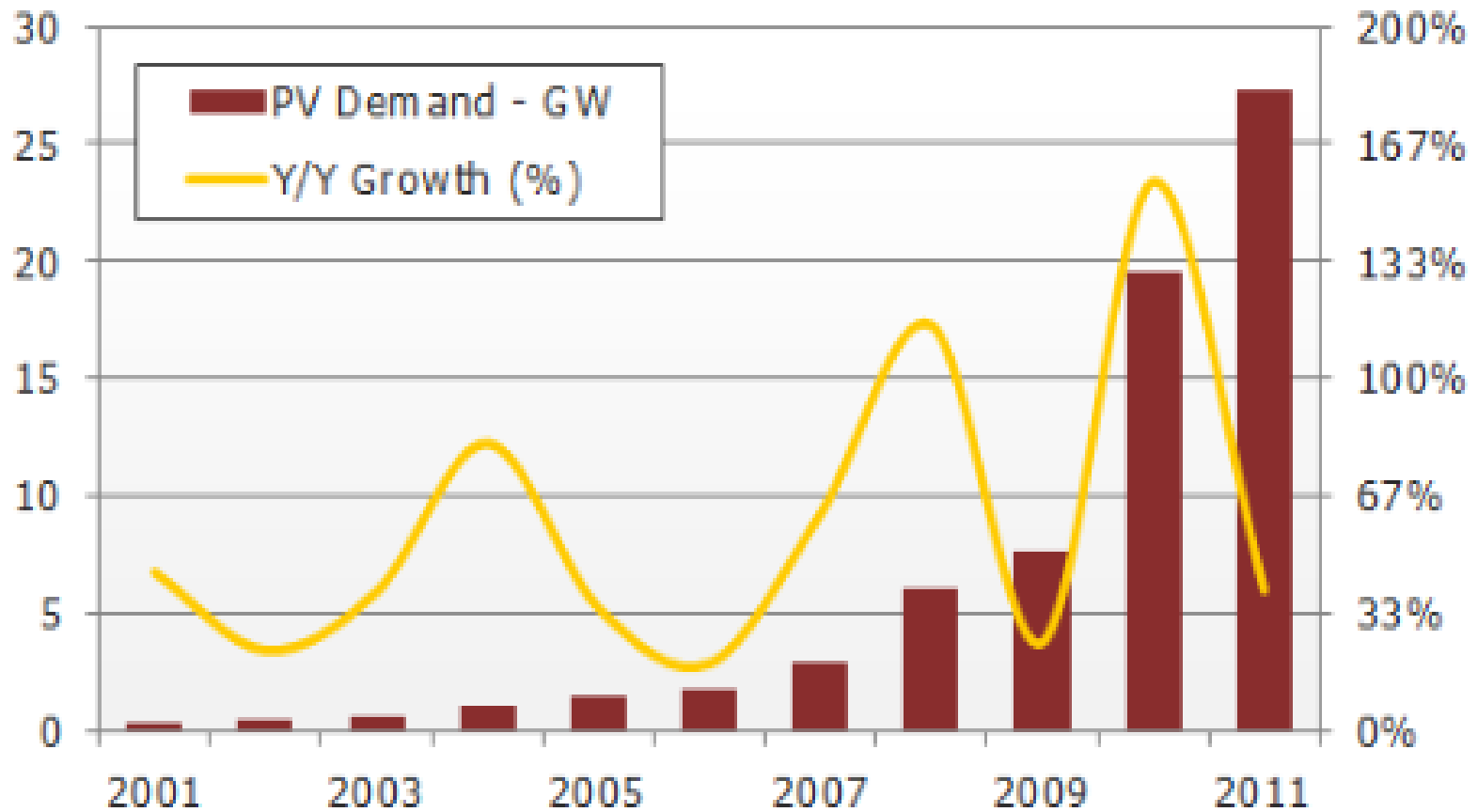
## 2. Global photovoltaic market and production status



# Major PV Country Markets (GW)



# Global Annual PV Industry Demand and Growth Rates



# 3. Solar energy Legal and policy framework in China

Laws, regulations and policy

Economic encouragement policy

Industrialized support policy

**Framework**



# 3.1 Laws, regulations and policy

## ❖ Laws:

Electricity Law of the PRC ,1995

Energy Conservation Law of PRC, 1997

Air Pollution Prevention Law of PRC, 2000

PRC Law of Renewable Energy, 2005





# 3.1 Laws, regulations and policy

## ❖ Regulations:

*Guidance and Content for the Development of Renewable Energy Industry*

*Temporary Method for Managing the Special Capital of Renewable Energy Development*

*Temporary Management for the Price and Cost Sharing in Renewable Energy Power Generation*

*Administrative Regulations on Renewable Energy Power Generation*

*Mid- and Long-Term Development Programming for Renewable Energy*



# 3.1 Laws, regulations and policy

## ❖ Policy:

*Further Support on the Development of Renewable Energy*

*2000–2015 New Energy and Renewable Energy Development Principles*

*Comprehensive Working Programs on Energy Saving and Emission Reduction*

etc.



## 3.2 Economic encouragement policy

Financial subsidy

Favorable taxation policy

Favorable price policy

Economic policy  
framework



## 3.3 Industrialized support policy

- ❖ In recent years, Chinese government has implemented State Technical Problem Tackling Plan, high technology research plan, industrialized development special item and key equipment special item, etc. Through these doing, the government is to support the use of solar energy, photovoltaic power generation.
- ❖ some enormous enterprises have come into existence, such as Wuxi Shangde, Tianweiyingli, Xinjiang New Energy, etc.



# 4. Status of PV industry development in China

1

Development status of PV industry chain in China

2

Status of Chinese PV application market

3

R&D status of PV industry in China



# 4.1 Development status of PV industry chain in China

Phase 1

Phase 2

Phase 3

*The status of polycrystalline silicon, crystal pulling ingot and section industry*

*Status of batteries and modules manufacturing industry*

*Status of hull cell industry*

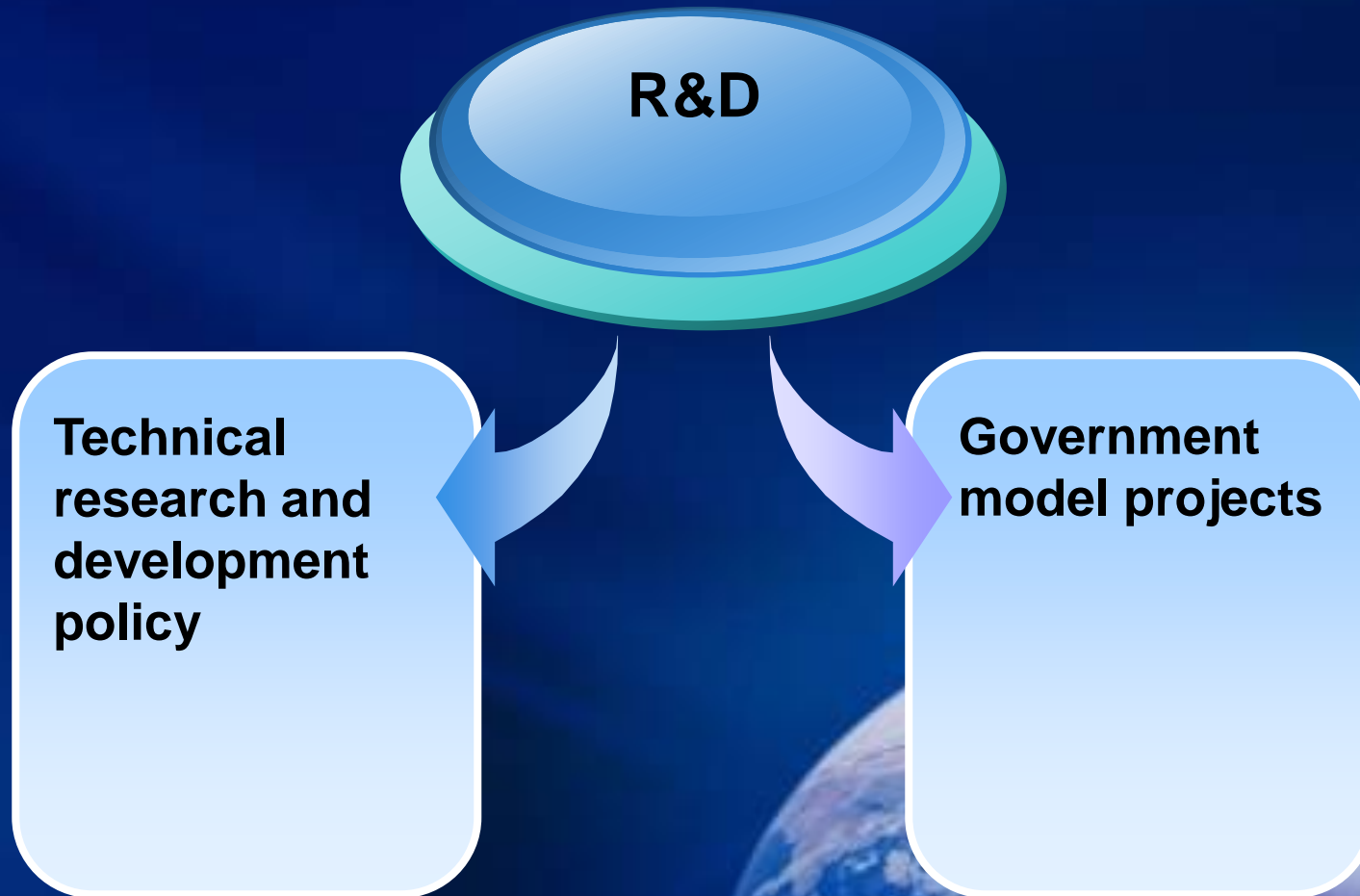
*Application of PV and the status of system integration industry*

## 4.2 Status of Chinese PV application market

- ❖ Approximately 53.8% of Chinese PV systems are applied for communication industry and solar PV products. 46.2% are applied for rural electrification and grid-connected PV power generation and other government support programs. The Grid-connected power generation only covers 5% and the rest parts are all independent PV systems.



# 4.3. R&D status of PV industry in China





## 4.3.1 Technical research and development policy

- ❖ Chinese government has implemented State Technical Problem Tackling Plan (since 1982), 863 Plan (since 1986), 973 Plan (since 1997), arranging capital to support the research on the development and techniques of renewable energy, such as solar energy
- ❖ The research and development of renewable energy are included in many projects. In Mid- and Long-Term Development programming for Renewable Energy which was passed on 7 June 2007, the goal was set that central finance will set up special fund for developing renewable energy in support of the technical research and industrial construction of renewable energy.

## 4.3.2 Government model projects

Time	Project	Initiating institution	Brief introduction
1996	Bright Project	State Commission of Development and Reform	Provide renewable power to $2 \times 10^7$ Chinese citizens
2000	Tenth Five Year Plan	State Commission of Development and Reform	Up to 2005, the installed capacity for wind power generation reached 1500 kW
2000	Renewable Energy Industrial Development Plan	State Commission of Economy and Trade	Up to 2015, the installed capacity for wind power generation reaches 7000 MW
2002	Acceleration Plan for Bright Project	State Commission of Development and Reform	Provide a capital of RMB $1.8 \times 10^9$ yuan for solar energy and wind energy projects
2002	Electricity Delivered to Village Project	State Commission of Development and Reform	Solve the domestic power problem for $4.0 \times 10^5$ citizens
2003	Six Smalls Project	State Commission of Development and Reform	Water conservation and irrigation, human and animal drinking, rural road, rural water and electricity, pasture barrier and some other projects
2006	Scaled Development Project on Renewable Energy	Chinese Government, World Bank, World Environment Fund	Study and formulate the policy for the development of renewable energy; support the technical advances in renewable energy; construct an industrial system for renewable energy; to realize the scaled development of renewable energy

# 5.Future strategy of PV industry in China

5.1	<i>Improving the effectiveness of policy completeness and policy grouping</i>			
5.2	<i>Enhance the policy innovation in policy regions</i>			
5.3	<i>Construct the regional echoing mechanism for clean development mechanism</i>			
5.4	<i>Enlarge investment on research and development</i>			
5.5	<i>Develop process management, ensure the effective function of policy</i>			
5.6	<i>Construct a market investment and financing system</i>			

## 6. Conclusions

- ❖ socialized use and industrialized development of PV industry is a long-lasting and complicated process, which requires not only policy support from the state but also breakthroughs and development in techniques and markets; relentless support in terms of policy should be offered; continuous breakthroughs should be made in terms of techniques and unceasing cultivation and perfection be carried out in terms of market; only in this way could energy make enormous contributions to the further development of human race.



**Thank You !**

