

# The Status and Policies Of Korean Renewable Energy

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# **Energy Review In KOREA**

# Energy Review in Korea (Overall)

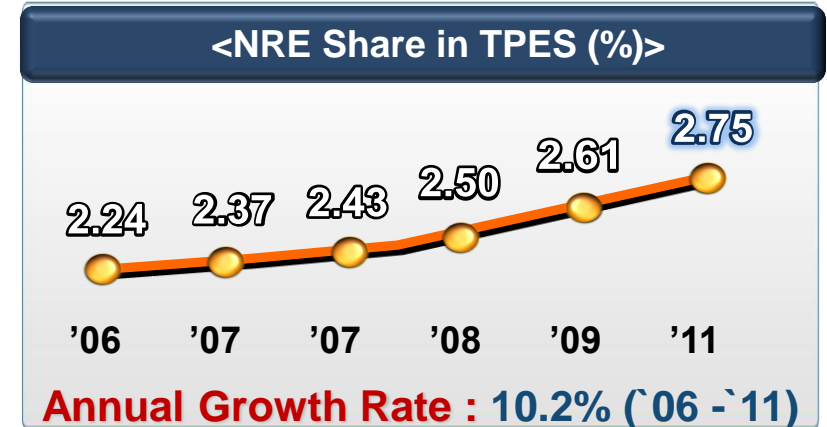
## ④ New & Renewable Energy Sources in Korea

### RE : 8 Sources

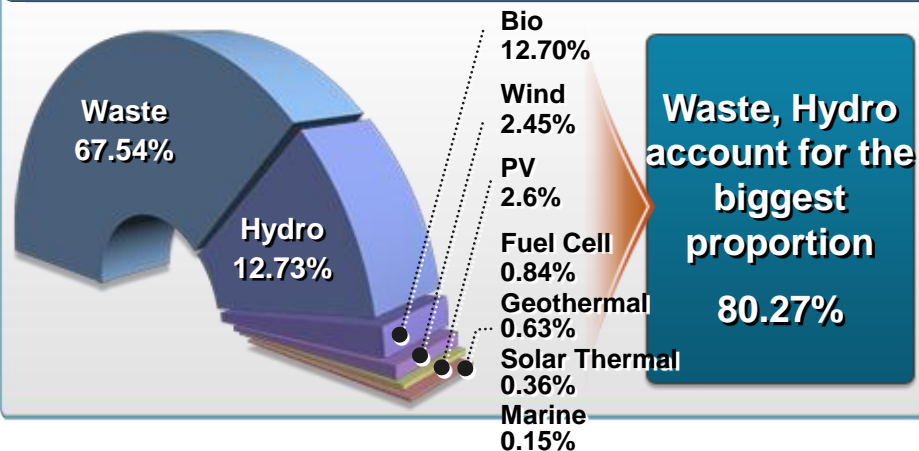
- PV, Solar Thermal, Wind, Waste, Hydro, Bio(LFG, Bio-Fuels), Geothermal, Marine

### New Energy : 3 Sources

- Fuel-cell, Hydrogen, Coal Liquefaction or Gasification

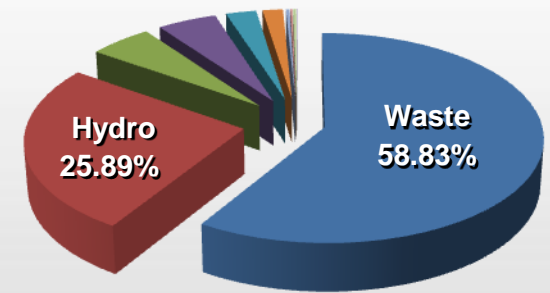


### < Breakdown of NRE share (2011) >



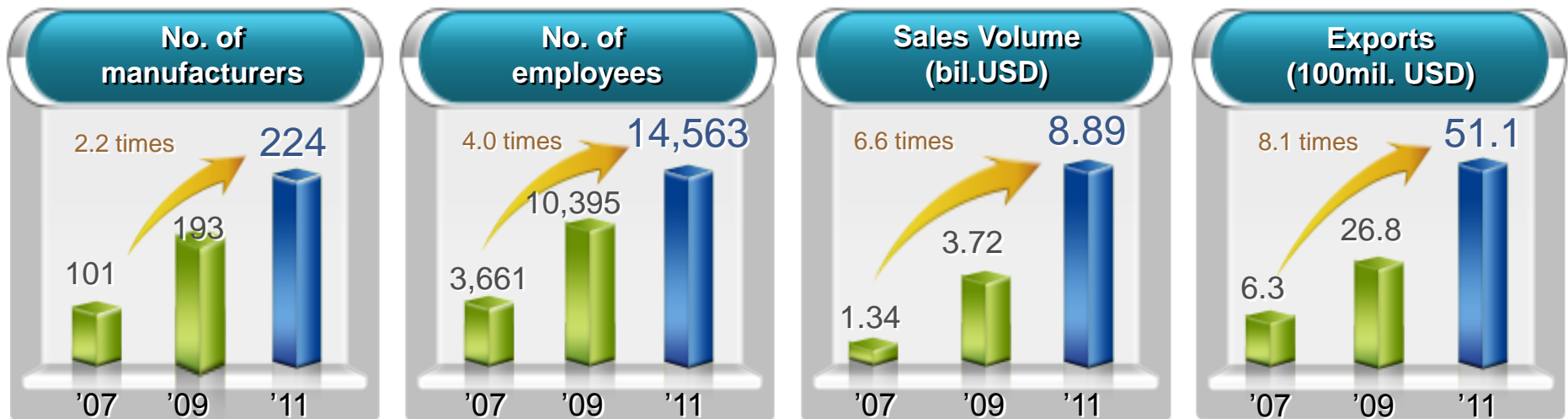
### < Power Generation from NRE (2011) >

- Wood 0.22%
- Biogas 0.26%
- Ocean 0.3%
- Fuel Cell 1.70%
- LFG 2.54%
- Wind 4.97%
- PV 5.29%



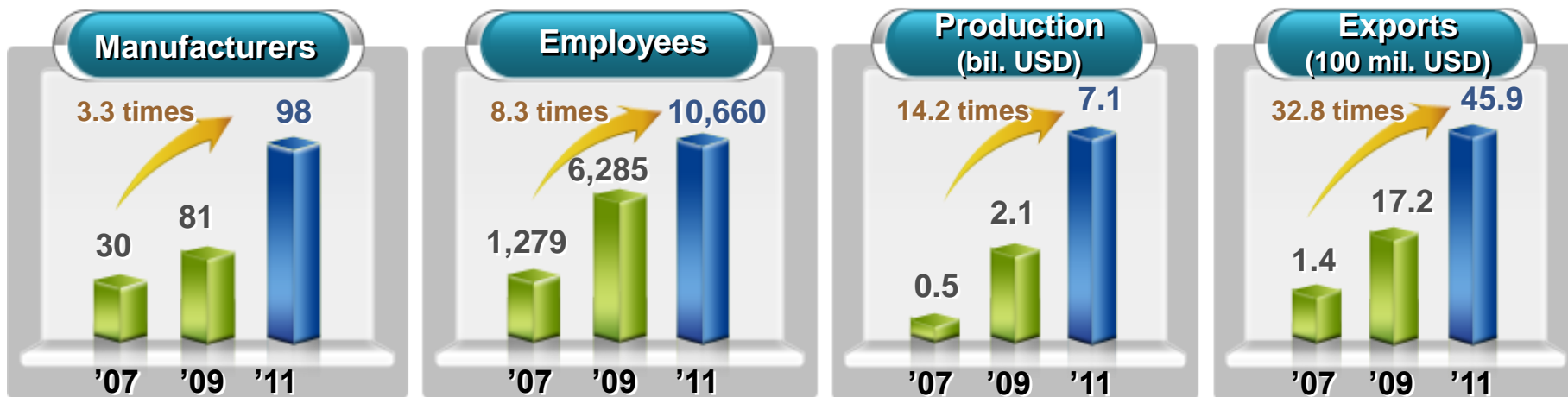
# Energy Review in Korea (Overall)

- Korea's NRE industry has been growing by leaps and bounds in recent years.



**Still small by global standards, but Korea's NRE industry has shown the potential for a new national growth engine.**

# Energy Review in Korea (PV)



With its complete value-chain, Korea is one of the most competitive players in global PV market

	World's Production Capacity	Korea	
		Production Capacity	Market Share
Poly-silicon	144,100 ton	18,960 ton	13%
Solar Cell	17,800MW	1,381MW	8%
Module	17,690MW	1,939MW	11%

# Energy Review in Korea (Wind)

## Wind

Existing industrial base:  
Heavy industries such as  
Electricity, Shipbuilding



Establishment of  
Industrial Structure  
with Huge Potential

### Manufacturers



### Employees



### Production (bil. USD)



### Exports (100 mil. USD)



Industrial structure has been built with collaboration between SMEs for components & large enterprises for finished goods

Category		Major companies
Parts	Blade	KM, Deck, Doha Industry, Gwangdong FRP, Hwashin FRP
	Tower	Dongkuk S&C, Unison, CS wind, Speco, Win&P
	Component	Taewoong, Pyungsan, Yonghyun BM, Hyunjin Materials, Unison, Mysco
System		Doosan, Hyundai, Hyosung, STX, Samsung heavy industries, DSME

# Energy Review in Korea (Others)

## Fuel Cell

- **Supporting Fuel Cell market by RPS (1<sup>st</sup> in the world)**
  - \* 36,450kW generation capacity ('10)
- **Supporting Fuel Cell for house/building through dissemination program ('10~)**
  - Supporting 21kW for building, 209kW for house ('10)
- **POSCO Power Fuel Cell Stack Plant (100MW/yr) – Construction Completed (Mar. 11)**

## Bio-Diesel

- **Rise in supply of Bio-Diesel by Bio-Diesel Dissemination Plan**
  - \* Supplied amount by year(unit: kl) : 105,705(07)→196,289(08)→280,872(09)→394,836(10)
- **Encouraging participation of SME and Large Enterprises**
  - \* 22 Bio-Diesel manufacturers including Large Enterprises, such as SK Chemical, AEKYUNG Petrochemical

## Tidal

- **Operating Shi-Hwa Tidal Power Plants (254MW)**
  - \* Ga-ro-lim Bay, Incheon Bay, Gang-hwa Bay, etc. Several tidal power plants are under consideration.

## IGCC

- **Launched 2<sup>nd</sup> phase of R&D project ('11)**
  - \* Construct a 300MW pilot plant until 2015



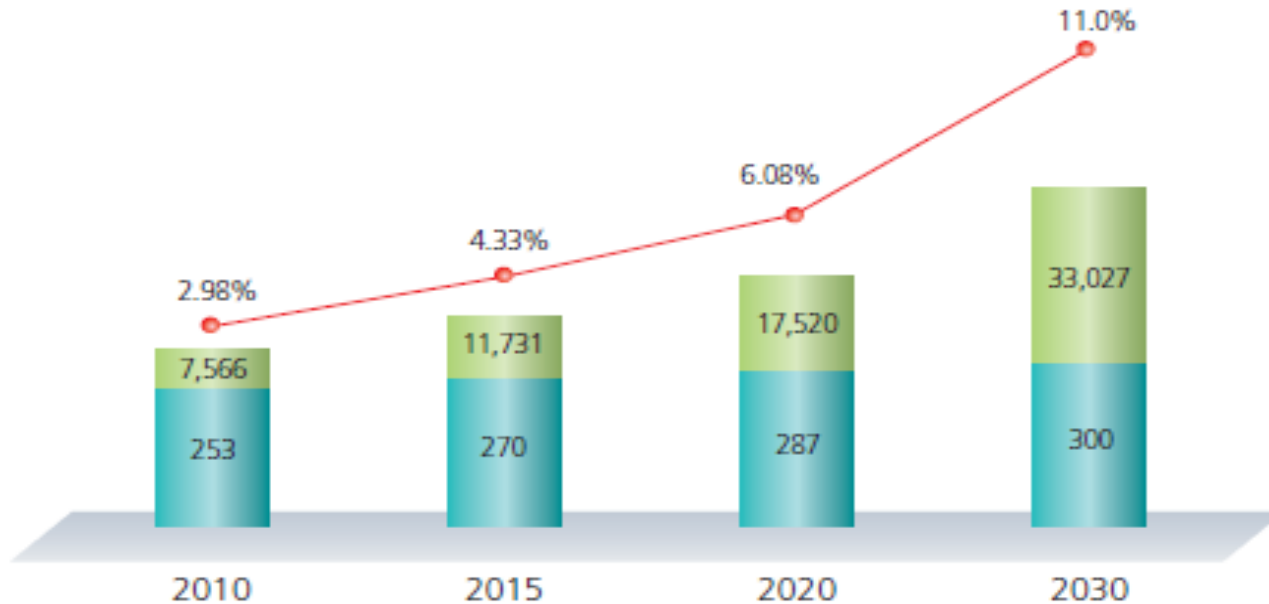


# Vision and Target

# Vision and Target

**Target 2030**

Achieve NRE deployment rate of 11% in 2030  
Industrialize NRE as a green growth engine



**1** Strategy 1  
Facilitate industrialization

**2** Strategy 2  
Increase dissemination

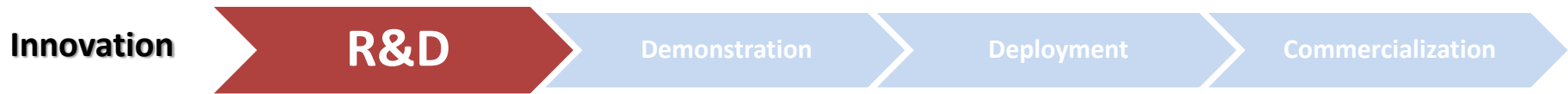
**3** Strategy 3  
Expand infrastructure

**4** Strategy 4  
Introduce Market functions



# **Implementation : Action plan**

# Implementation : Action Plan



1

**Development of breakthrough innovative technologies with high potential for leading global market**

- Strengthen public-private partnerships and encourage the participation of SMEs in government funded R&D projects

2

**Localization of key components, materials and equipments to enhance price competitiveness**

- Increase government R&D budget for SMEs' components, materials and equipment development

3

**Development of Test-bed sites for renewables**

- Support for testing and analysis by renewable sources, performance testing, reliability test of R&D outcomes

# Implementation : Action Plan



- Ⓞ Various demonstration programs are being carried out.
- Ⓞ H-Town(Hydrogen) Demonstration Project



# Implementation : Action Plan

Innovation

R&D

Demonstration

**Deployment**

Commercialization

## Home Subsidy Program

Supply residential energy sector with new and renewable energy including photovoltaics, concentrated solar power, thermal power and fuel cells

## Certification of Buildings Using New & Renewable Energy

Area of public building with 1,000 m<sup>2</sup> or above is newly constructed, extended, or rebuilt, from 2013, it is compulsory to apply renewable energy in the process of construction with the minimum 11% of expected energy usage

## RPS

Korea recently changed the renewables policy from FIT to RPS('12) Targeting 10% of electricity from renewables by 2022

\* 13 companies that have power plants generating more than 500MW(Excludes NRE power plants)

## RHO

Area of newly-built building (except houses and public facilities) is 10,000 m<sup>2</sup> or above, approximately 10% of the building's usage of thermal energy needs to be replaced by renewables.

## RFS

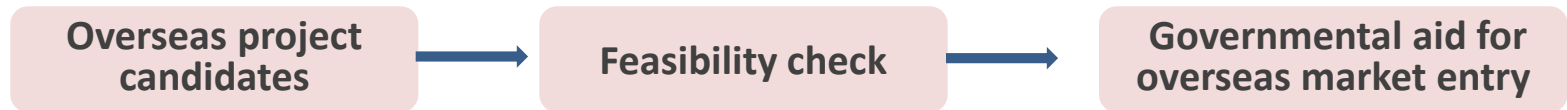
In order to spread the supply of biofuels, RFS, which is a mixed mandatory policy of renewable energy, will be implemented in 2015.

# Implementation : Action Plan



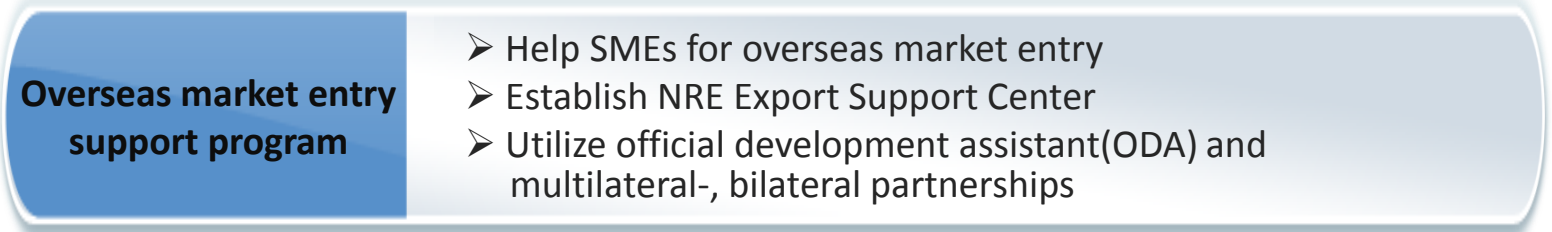
1

## Support for overseas market expansion



2

## Establishment of general support system for overseas market expansion



3

## Increase the public acceptance of new and renewable energy products





# Thank You