



28th IPHE Steering Committee Meeting

K O R E A

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Yonsei University

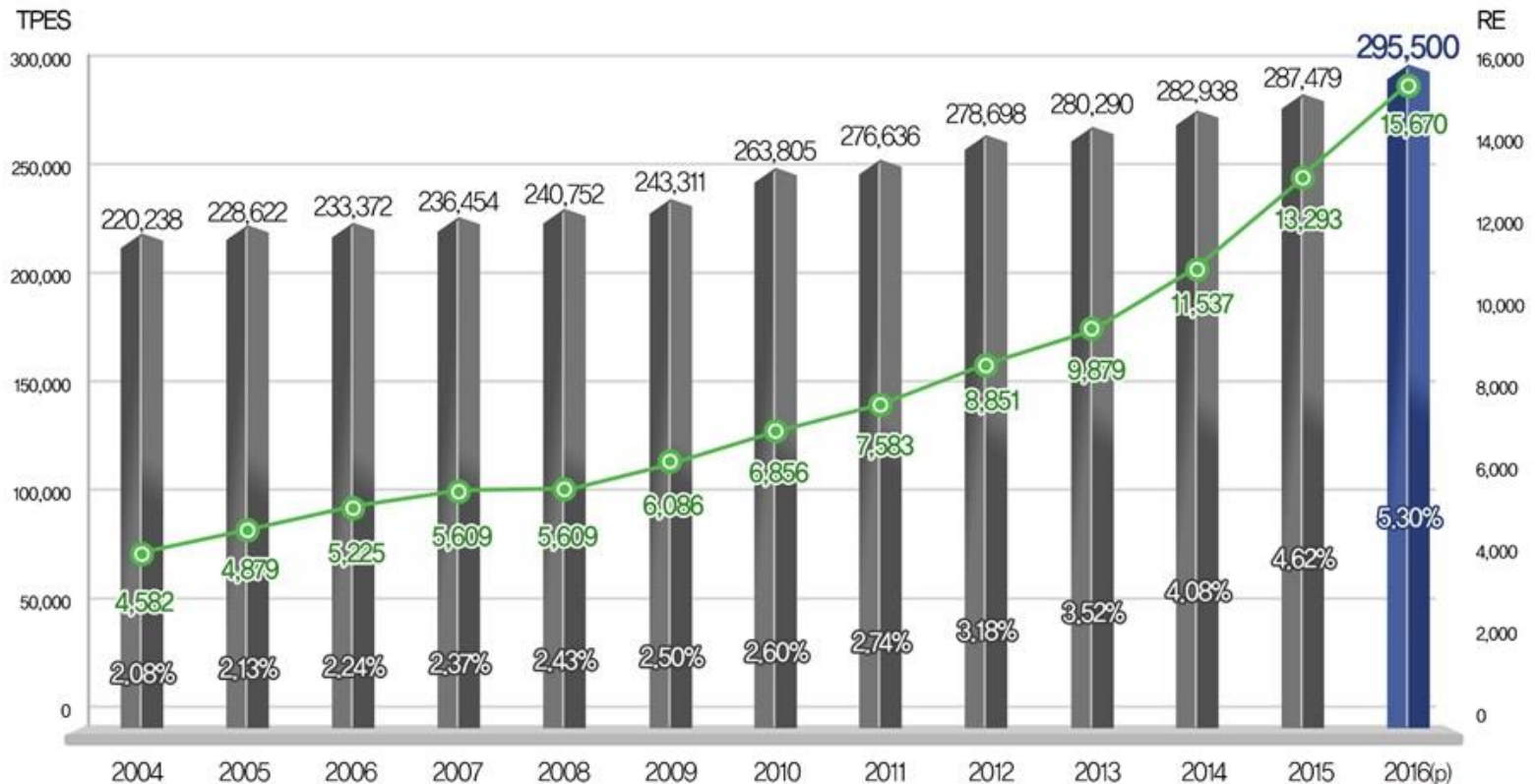
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Korea Renewable Energy – Current

◆ *Renewable Energy Supply (TPES)*

■ TPES(1,000toe) ■ Renewable Energy Supply(1,000toe)





Energy Policy Transition by New Government

Sustainable KOREA!

- Energy Transition from new nuclear power & Fossil fuel power generation
- To Increase 20% of renewable energy by 2030 and relevant job creation



Korea Green Energy – Current & Future

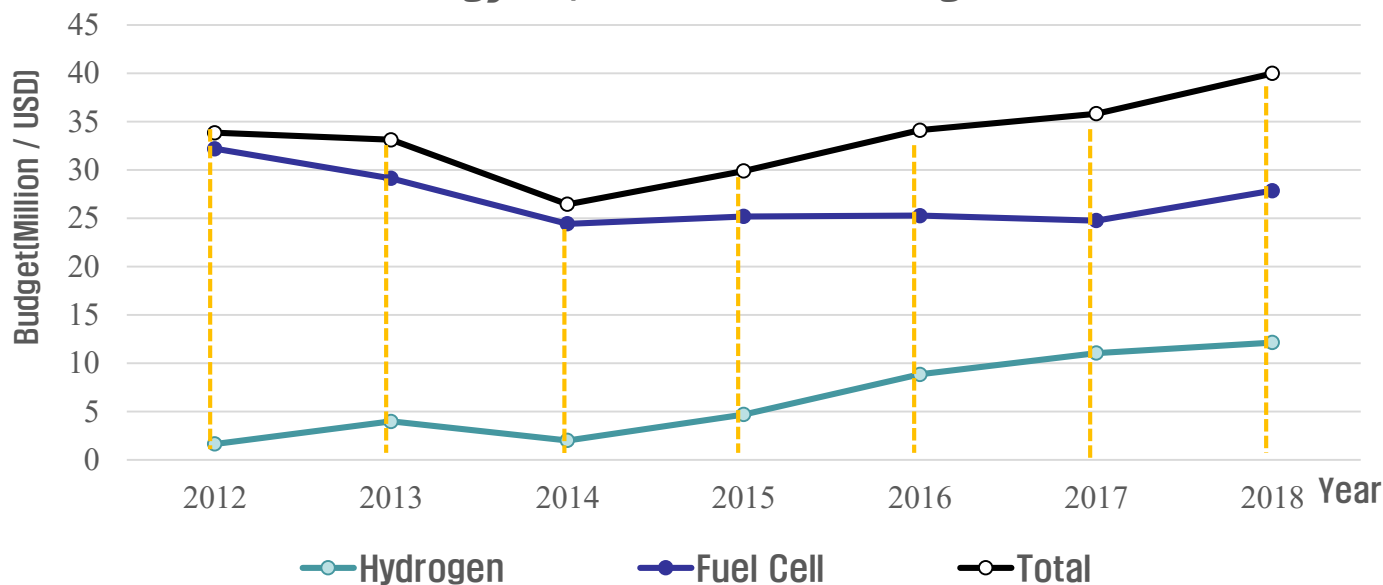
◆ To achieve 20% target by 2030

- The government has set in motion a energy switch *Nuclear-Free Roadmap*
 - (1) Phased reduction of nuclear plant,
 - (2) Increase in renewable energy,
 - (3) Local industry supplement plan include
 - Increase renewable energy up to 20% which is currently 7% by 2030
thus making up the needed energy with cleaner options.
- Investment for grid stability: T&D improvement, securing backup power
- Efficient demand side management using smart grid infrastructure
- Renewable Energy R&D investment (2016–2020)



2018 Energy R&D budget

Energy(H₂/FuelCell) R&D budget



H ₂ · Fuelcell R&D budget	2012 Budget (Million / USD)	2013 Budget (Million / USD)	2014 Budget (Million / USD)	2015 Budget (Million / USD)	2016 Budget (Million / USD)	2017 Budget (Million / USD)	2018 Budget (Million / USD)
<i>Hydrogen</i>	1.65	3.99	2.02	4.69	8.85	11.06	12.14
<i>Fuel Cell</i>	32.20	29.13	24.43	25.20	25.27	24.77	27.86
Total	33.85	33.12	26.45	29.89	34.12	35.83	40.00

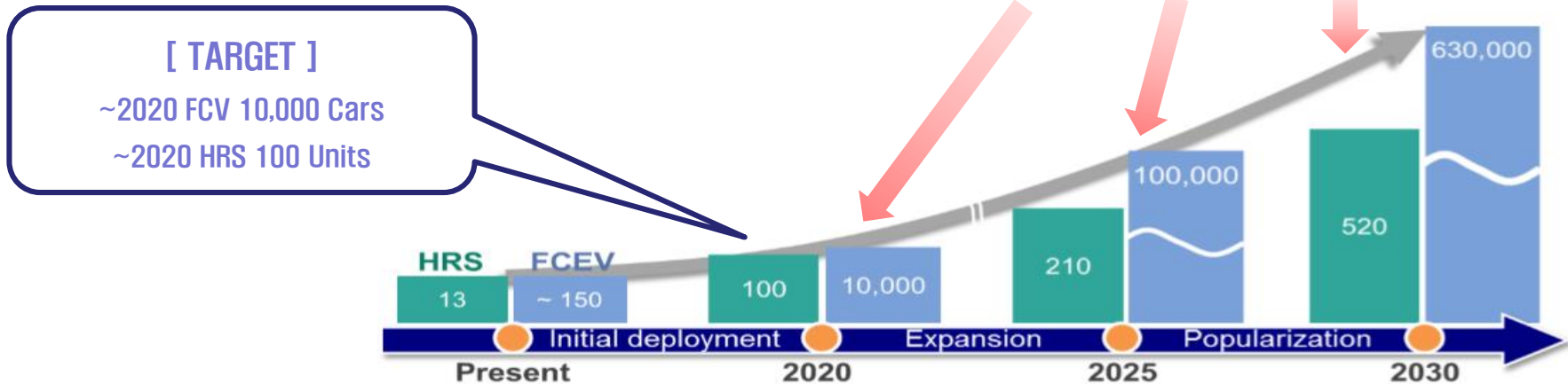


Policy : 2030 Fuel Cell Vehicle Plan

◆ 「2030, Fuel Cell Vehicle 10% Era」 (10% of new car sales, 0.18M/1.67M)

Vision (Strategy)	<ul style="list-style-type: none"> - Realization of Hydrogen-based economy - FCV is expected to become viable without financial support
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		* (HRS : 1 unit, FCV : 1,000 units)								
Target	Category	~ '16	'17	'18	'19	'20	~ '25	~ '30	~ '50	
		FCV	Total: 0.2 New: (0.1)	0.5 (0.3)	3.0 (2.5)	6.0 (3.0)	10.0 (4.0)	100 (91)	630 (530)	7,000 (6,370)
	HRS	Total: 13 New: (3)	25 (12)	50 (15)	75 (20)	100 (30)	210 (130)	520 (310)	1,500 (980)	





New Activities : Doosan

Doosan Corporation Completes Construction of Fuel Cell Production Facility



▶ The Iksan Factory(new power plant)

- The Iksan Factory(new power plant) is capable of producing an annual production capacity of 63MW fuel cells per year, the highest in Korea. Combined with its fuel cell factory in the US state of Connecticut. Doosan will acquire production capabilities for a 126MW power-plant-use fuel cell systems making it the global leader in it' s field.



New Activities : Hyundai Motors



	Current	2nd Generation FCEV : 2020 (est)
Hydrogen FCEV	One model (Tucsonix FCEV)	<ul style="list-style-type: none"> - Two models - FC system improvement <ul style="list-style-type: none"> →(1) Performance(20% increase over the previous model) (2) Durability(10 year – 160 thousand km) (3) Efficiency(single charge is set at 580km)



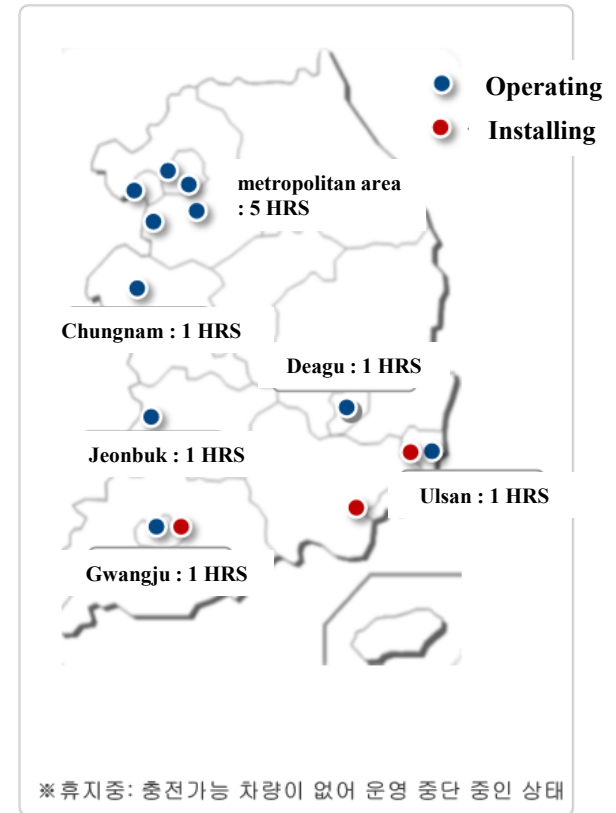
Domestic Hydrogen Refueling Stations(HRS) Status & Plan

Expansion of Refueling Station ⇒ Foundation for FCV Promotion

Hydrogen refueling station construction plan : ~20' 100 HRS , ~30' 520 HRS

- 10 stations operating in and around Petrochemical Complex and metropolitan area
- Infra. construction for hydrogen vehicle is expanding

Status	Supply Method	Area	Pressure (bar)	HRS Type
Operating	Off Site	Seoul	350	Tube Trailer
		Gyeonggi	700	Tube Trailer
		Gyeonggi	700	Tube Trailer
		Ulsan	700	Tube Trailer
		Gwangju	700	Tube Trailer
		Chungnam	700	Tube Trailer
	On Site	Seoul	350	Reforming
		Incheon	350	Reforming
		Deagu	700	Electrolysis
		Jeonbuk	700	Electrolysis
Installing	Off Site	Gwangju	700	Tube Trailer
		Ulsan	700	Tube Trailer
		Changwon	700	Tube Trailer
Stop	Off Site	Gyeonggi	700	Tube Trailer
		Ulsan	350	Tube Trailer
	On Site	Jeju	350	electrolysis





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Thank You