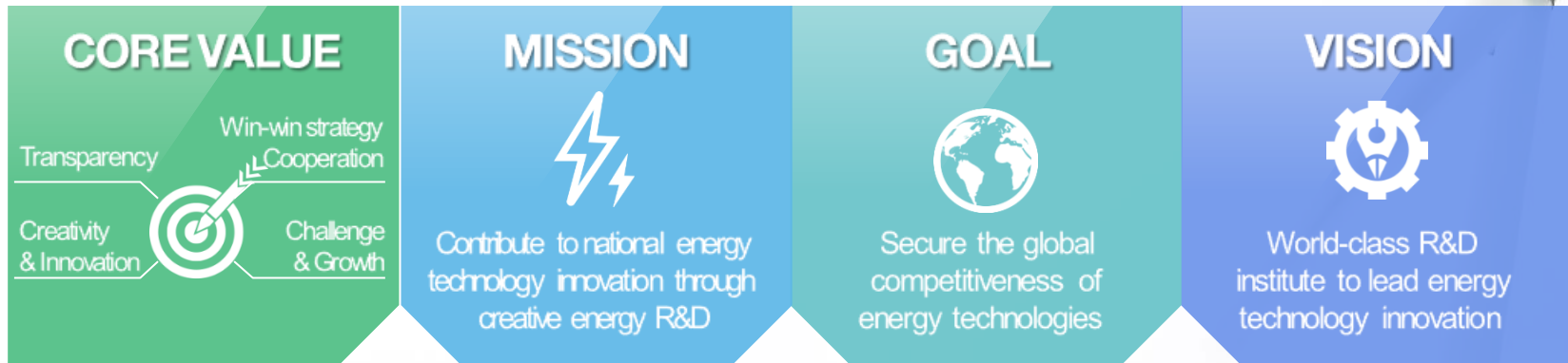




**KOREA INSTITUTE OF
ENERGY TECHNOLOGY
EVALUATION AND PLANNING**

Contributing to Korea's competitiveness through Energy Technology Innovation

Mission & Vision



Main Function



R&D BUDGET (FY2016)

591 million USD for energy R&D, international cooperation, small and medium-sized businesses supporting projects

Total budget in 2016
(591 million USD)

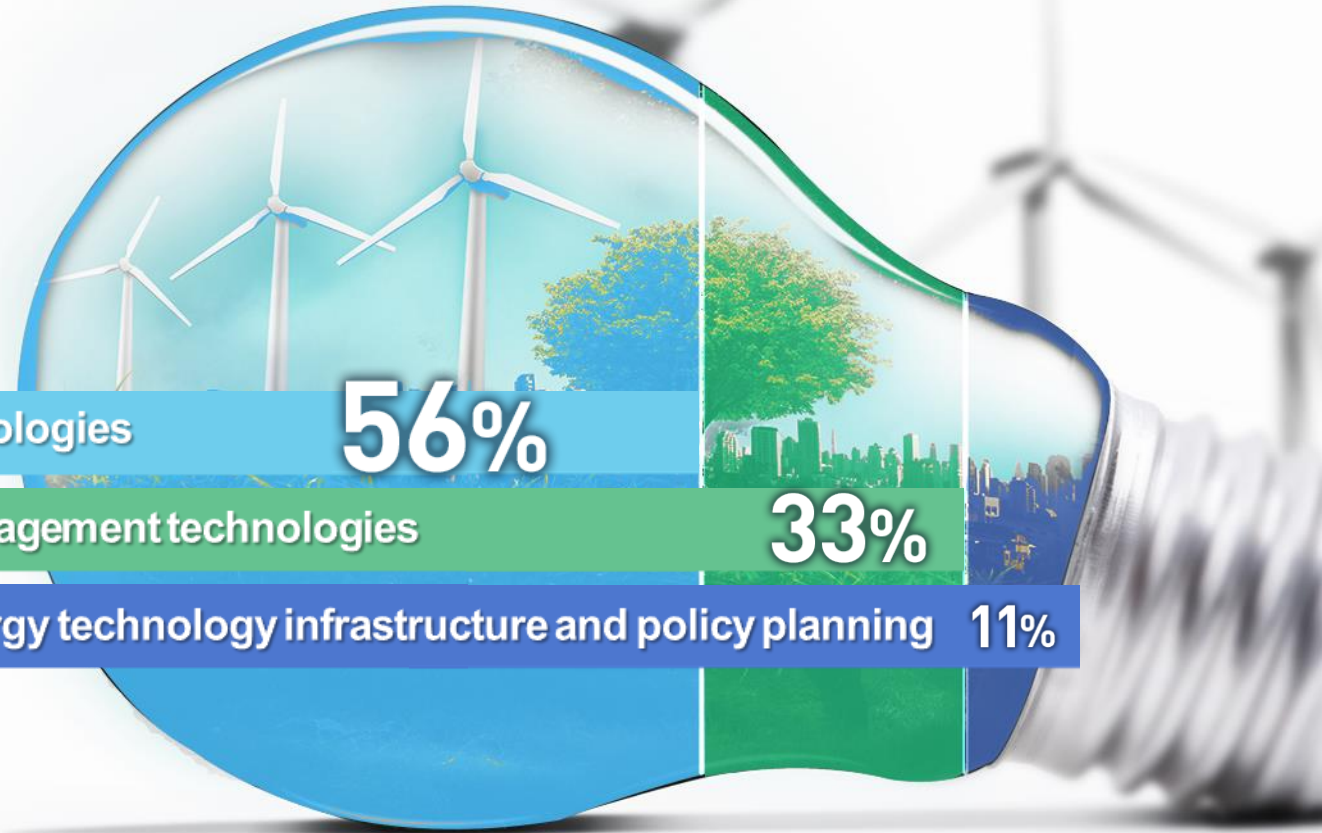
Energy supply technologies

56%

Energy demand management technologies

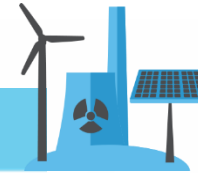
33%

Enhancement of energy technology infrastructure and policy planning **11%**



MAIN PROGRAMS (2016)

Energy supply technologies



- Renewable energy technology
- Nuclear technology
- Natural resources development technology
- Clean thermal power technology

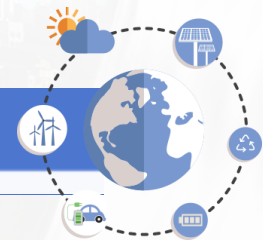
Energy demand management technologies



- Energy demand management technology
- Smart grid technologies
- Energy storage system

Energy demand management technologies

Enhancement of energy technology infrastructure and policy planning



- Human resource development program
- International joint research
- Establishing energy technology policies

1 Energy Demand Management

Goal

Technology development for energy efficiency improvement, greenhouse gas reduction, gas safety, and convergence technology for energy demand management

Projects

1 Energy efficiency improvement

Energy efficiency improvement and greenhouse gas reduction to achieve the National target

2 Gas safety

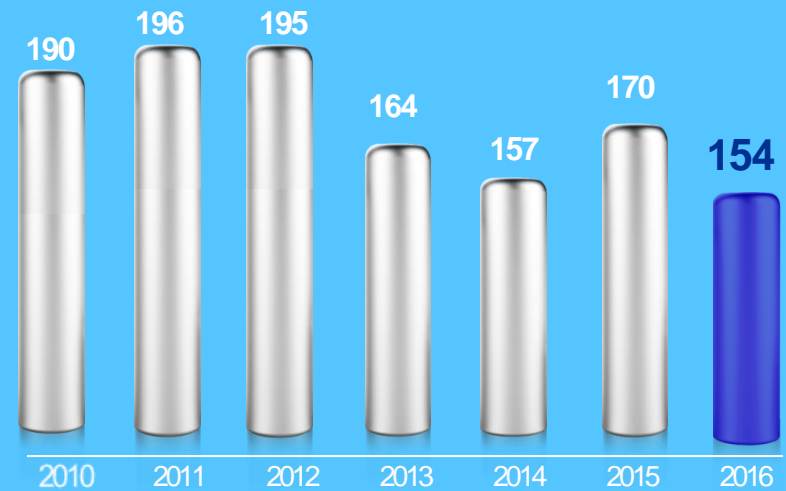
Efficient energy management by enhancing the safety of gases

3 CCUS

4 Convergence technology for energy demand management



Budget (unit: million USD)



Smart Grid

Goal

Technology development to reduce and distribute power demand, and create a new growth engine by activating a smart grid system that converges power and ICT

Projects



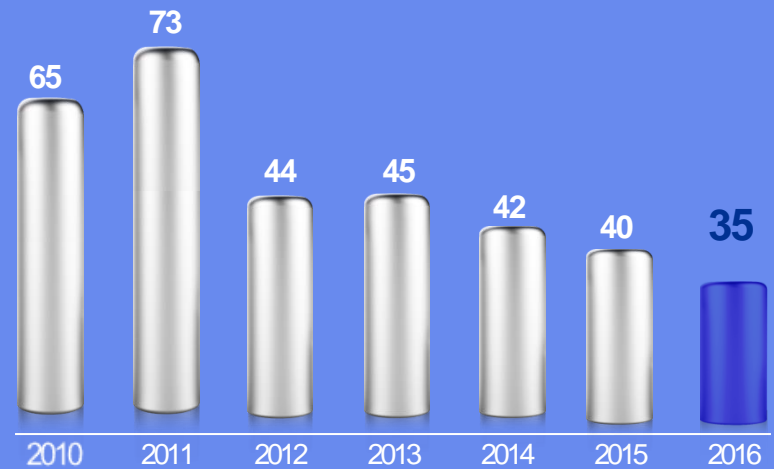
1 Intelligent power transmission and distribution technologies

2 Intelligent consumer technologies

3 Safety technologies



Budget (unit: million USD)



Field study on ESS

Goal Field study on a large scale energy storage system to establish safe and efficient power supply systems and promote renewable energy use

Projects



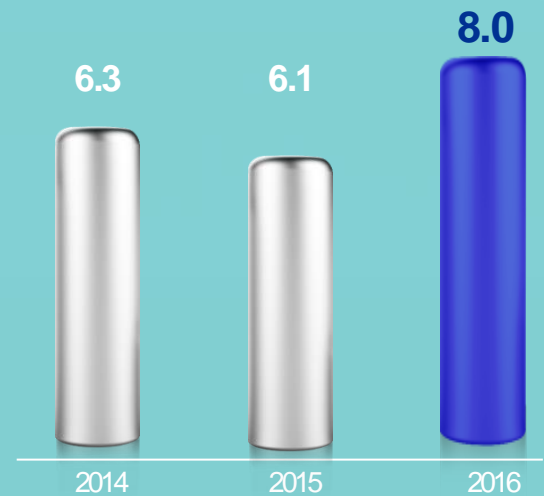
1 R&D on integrated operation, system connection algorithms

2 Power conversion systems, battery systems, operation

3 Equipments (software, servers etc.)



Budget (unit: million USD)



Renewable Energy

Goal Accelerate the transition to the clean energy based society, and encourage greenhouse gas reduction, green growth and green technology export industries

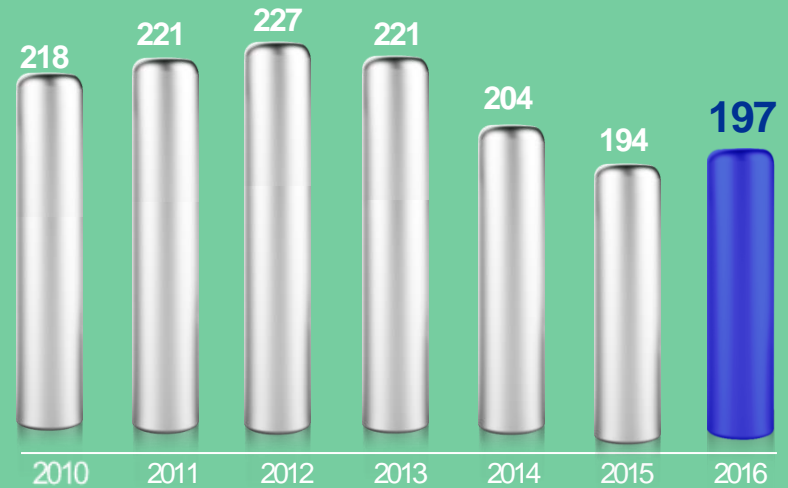


Projects



Solar cell	Wind power	Fuel cell
Hydrogen energy	Fossil utilization	IGCC
Hydraulic power	Marine energy	Bio-energy
Waste-to-energy	Solar power	Geothermal power

Budget (unit: million USD)



Clean Thermal Power

Goal Enhance the performance of combined coal and hybrid thermal power plants, and install high efficiency, environmental-friendly thermal power plants

Projects

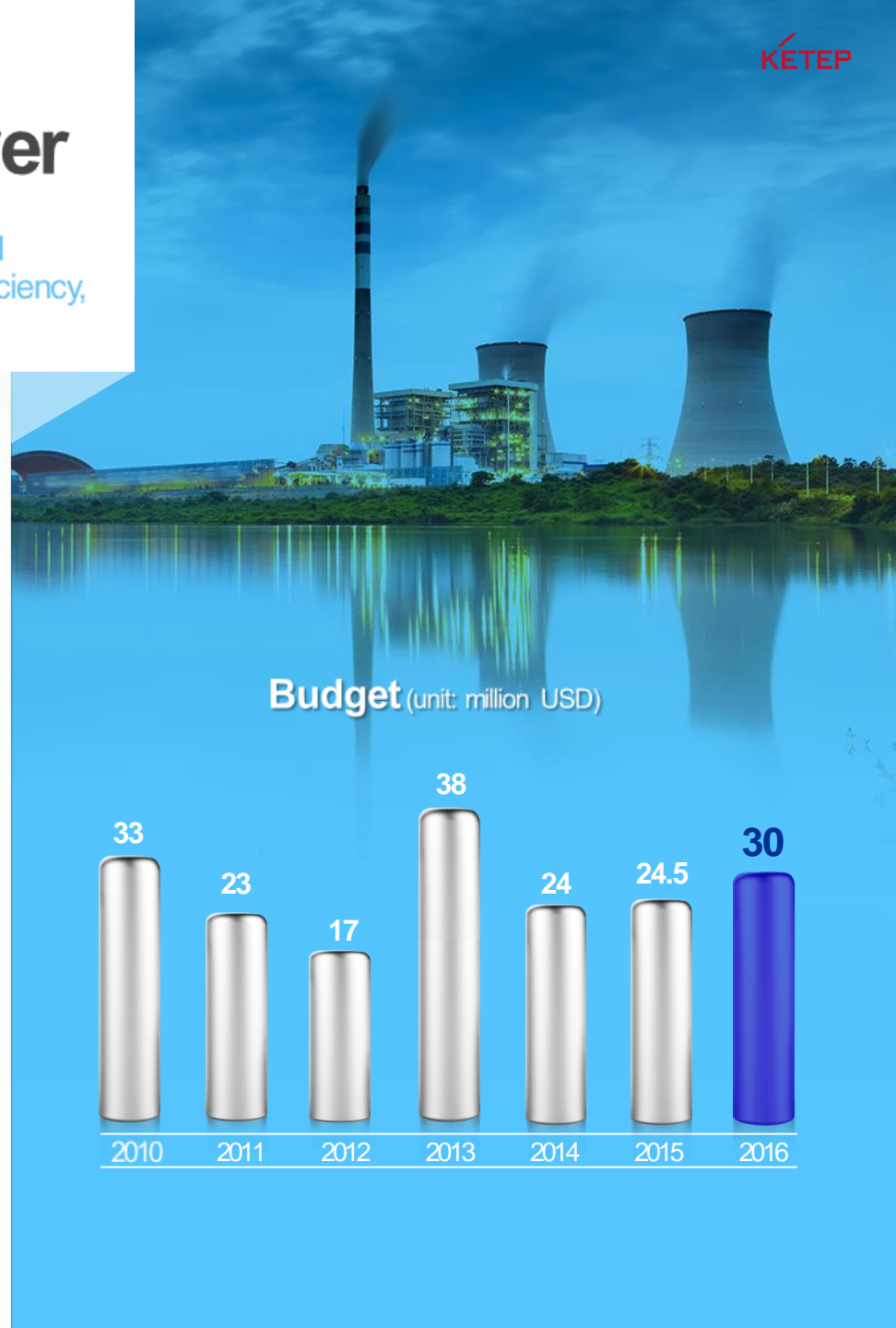


1

**High-efficiency,
environmental-friendly
clean thermal power**

2

**Innovation of breakthrough
technology
for clean coal power**



6

High-efficiency gas turbine for electricity generation

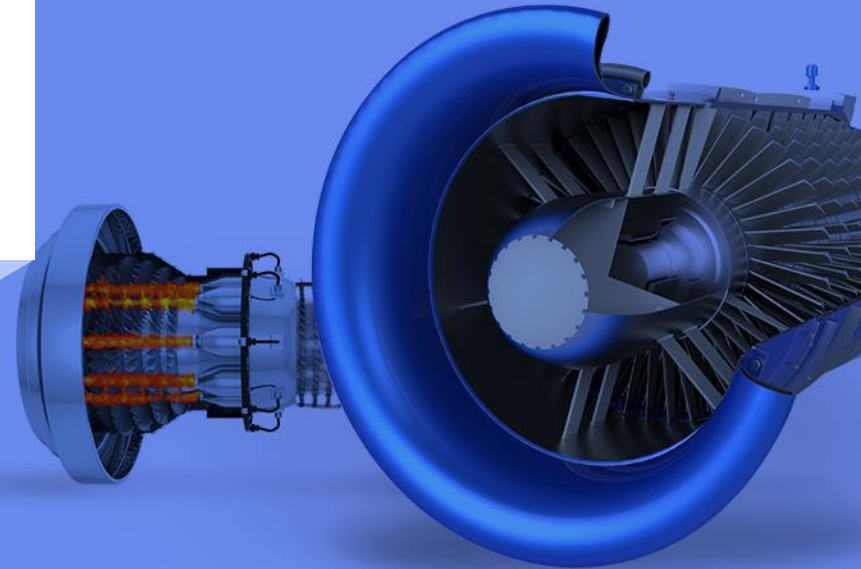
Goal Technology development for high-efficiency gas turbine for electricity generation

Projects

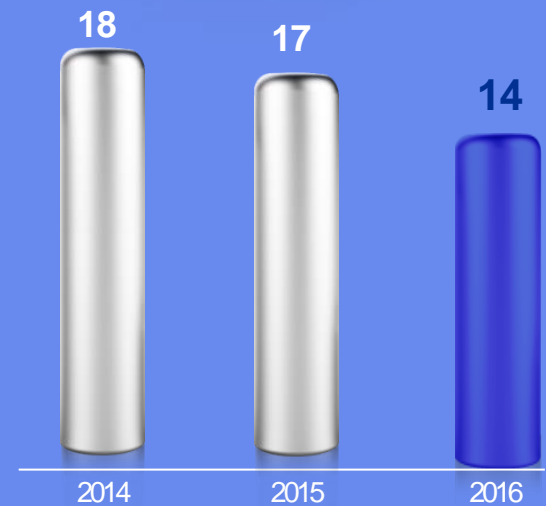


High-efficiency gas turbine for electricity generation

- 1 System design and test verification
- 2 Manufacturing of gas turbine parts
- 3 Evaluation processes and reliability of high-temperature resistant parts
- 4 Gas turbine performance monitoring system



Budget (unit: million USD)



Nuclear Power

Goal Assure safety in nuclear power plants, strengthen global competitiveness, and build a stable power supply infrastructure of nuclear power plants

Projects



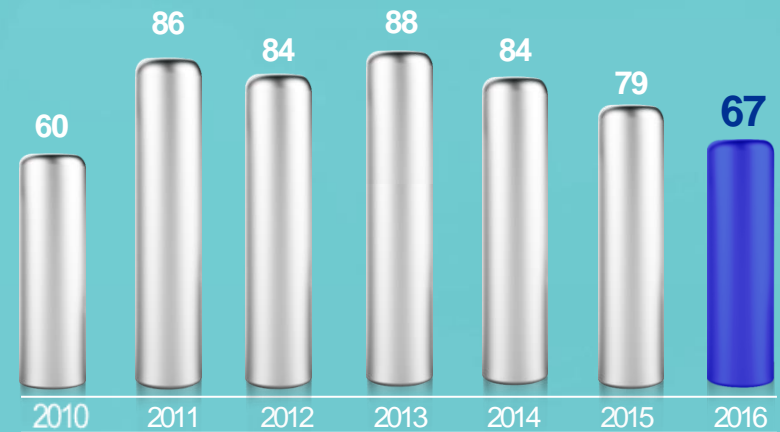
1 Safety and advancement of nuclear power plants

2 Equipment and operational performance of nuclear power plants

3 Nuclear power environment

4 Innovation of breakthrough nuclear power technology

Budget (unit: million USD)



Radioactive Waste Management

Goal

Safely and efficiently operate low and intermediate level radioactive waste treatment facility and Manage spent nuclear fuel

Projects



1

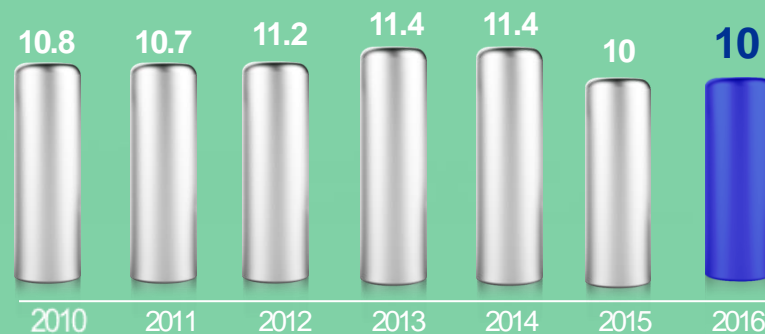
Management technology of spent nuclear fuel

2

Management technology of the low and intermediate level radioactive waste



Budget (unit: million USD)



Natural Resources Development

Goal Maximize technology performance compared to the investment in nature resources development

Projects



1

Large-scale commercialization technology development for field use

2

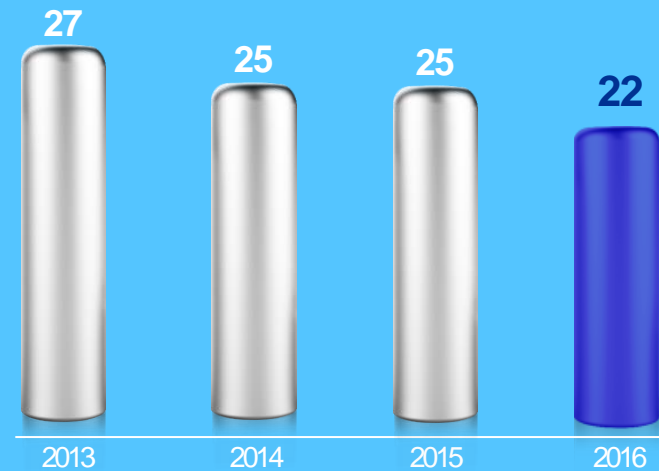
Innovative technology for oil/gas and mineral development

3

Service Technology for oil/gas and mineral development



Budget (unit: million USD)



Energy Professional Program

Goal Establish human resource development system which produces qualified experts and professionals for academia industry

Projects

1 Basic Energy Professional Track

Undergraduate level training program

2 Advanced Energy Professional Track

Post-graduate level training program

3 GET - Future

Supporting university laboratories

4 Overseas Personnel Invitation

Short-term training courses for overseas applicants

5 Industry Expert Training Center

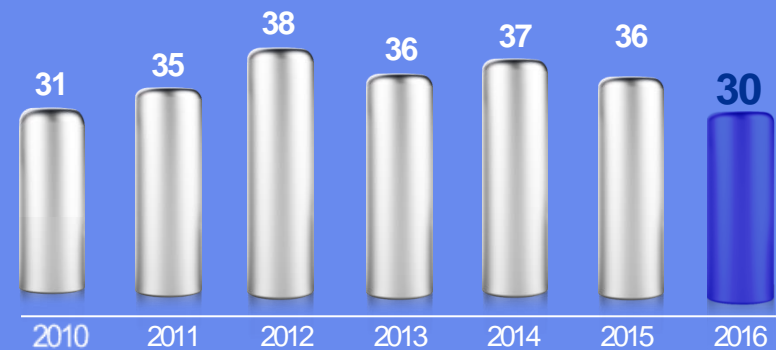
Training centers for industry experts

6 International Energy Policy Study

Post-graduate program for government officers from abroad



Budget (unit: million USD)



Energy Technology Policies

Energy R&D investment through a systematic analysis
of the rapidly changing market environment



1 Portfolio Analysis of Energy R&D

Building and operating portfolio
models for the allocation of
national energy R&D budget



2 Energy Technology R&D Strategy Roadmap

Developing energy R&D and market
strategies for key technologies



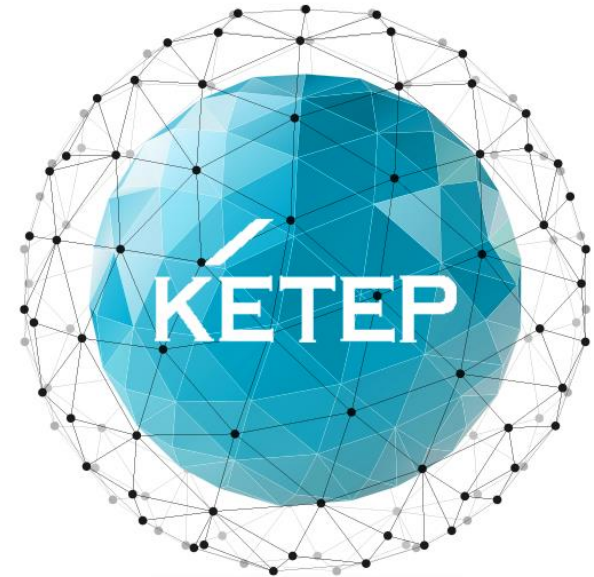
3 Energy Technology R&D Warehouse

Establishing energy R&D history
map and technology stock for
key technologies



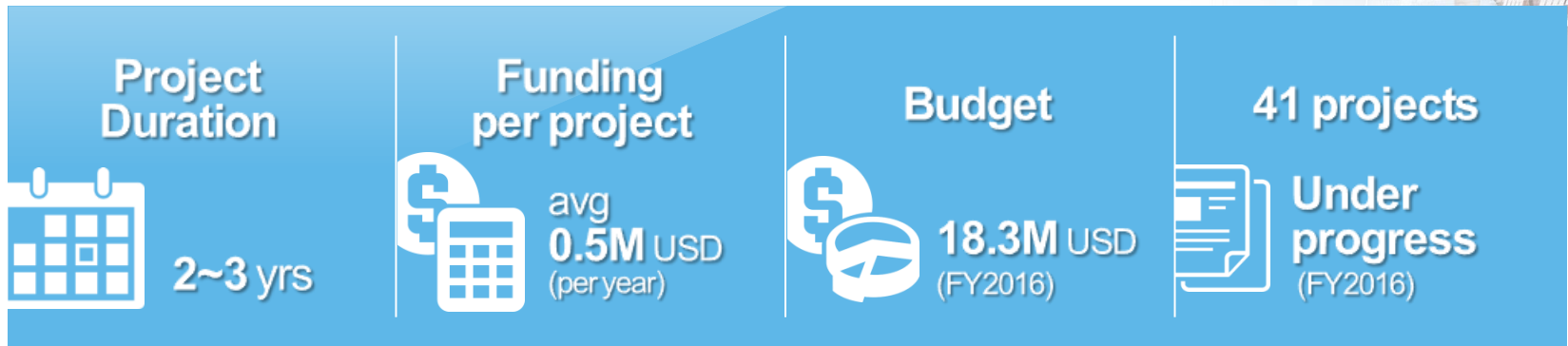
4 Energy Technology Market Analysis

Collecting and analyzing energy
technology and market information for
the purpose of forecasting market trends



Global Collaboration Program

Contribute to the global advancement of innovative energy technologies and complement domestic R&D efforts



Global **Leading** Technologies



US



Canada



EU(UK, Germany)



13.2M USD (2016)

Global **Market** Technologies



East South Asia
(Indonesia, Vietnam etc.)

5.1M USD (2016)

Bilateral Cooperation



Multilateral Cooperation



Bilateral Cooperation

Global Leading Technologies

Joint projects that are highly innovative and may create a significant impact

Global Market Technologies

Joint projects in the commercialization stages to enter overseas markets

Bilateral Cooperation



UK: **EPSRC**

KETEP-EPSRC co-funding joint projects (fuel cell, smart grid)

Germany: **Fraunhofer**

co-funding joint project (PV)

East South Asia

Collaborative R&D program to enter global market

Canada: **Canmet Energy**

Cooperation in natural resources (oil sands and shale gas) and renewable energy

US: **DOE**

Sharing technology and policy information, developing joint projects (energy storage, microgrid)

Bilateral Cooperation



41 bilateral collaboration projects are currently underway
with **17** countries (European countries, China, Saudi, Vietnam)

Bilateral Cooperation



Multilateral Cooperation



Multilateral Cooperation

IEA CERT

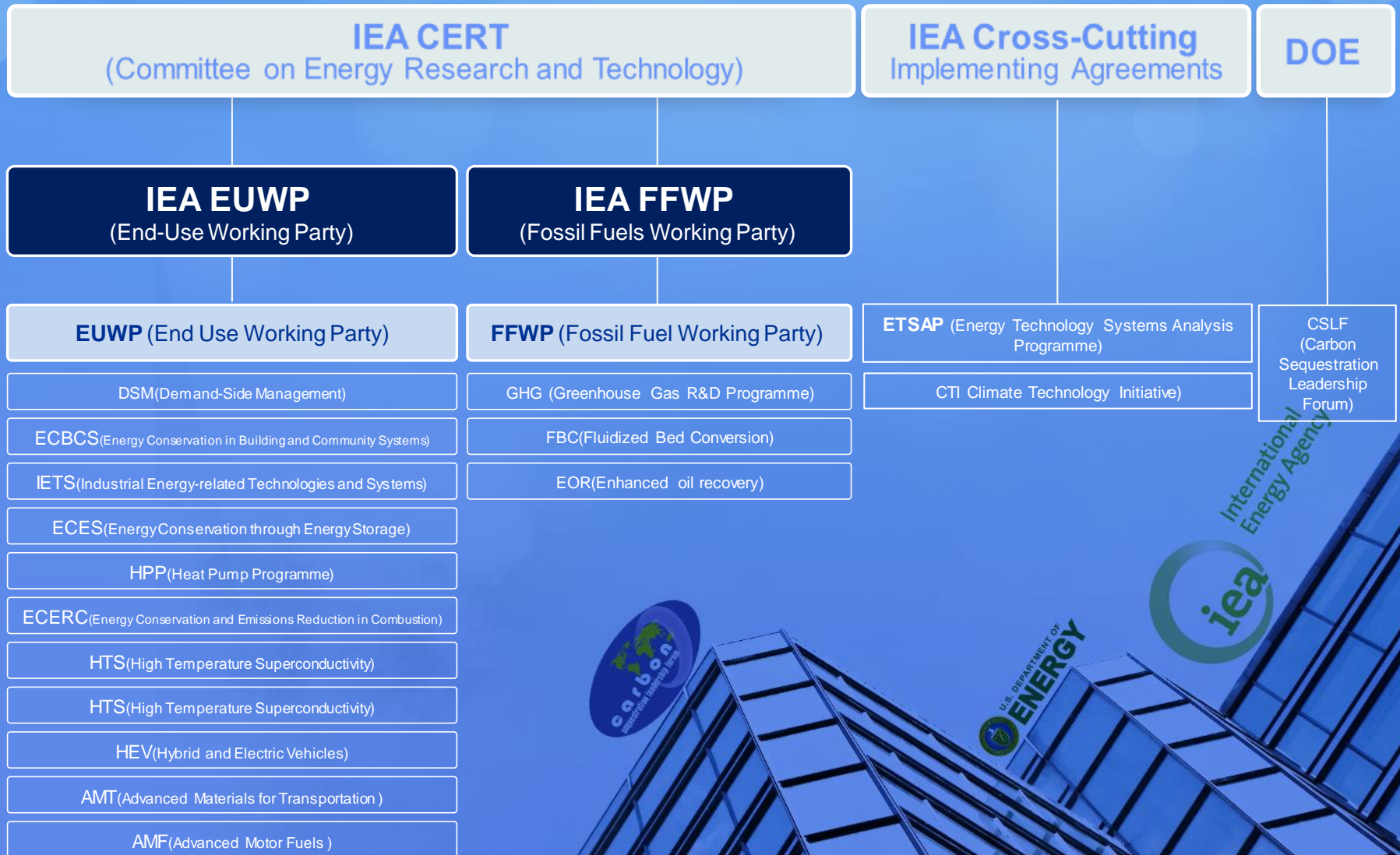
EUWP, FFWP,
16 Implementing
Agreements



DOE CSLF



Multilateral Cooperation



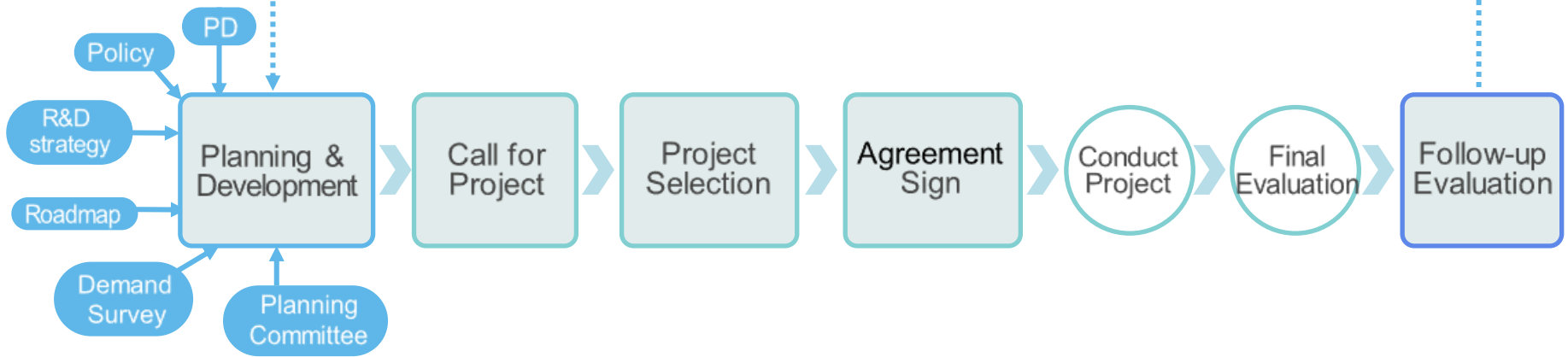
Project Development Progress

Policy-making & Project Planning

Evaluation & Management

Follow-up

Feedback of Evaluation





THANK YOU



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