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Trade in Energy Services for SDG7 in Korean Landscape

by

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1

SDG7 Goal and Trade in Energy Services

1-1. SDG7 Goal:

Ensure access to affordable, reliable, sustainable and modern energy for all

❖ Facts

- One in five people still lacks access to modern electricity
- 3 billion people rely on wood, coal, charcoal or animal waste for cooking and heating
- Energy is the dominant contributor to climate change, accounting for around 60% of total global greenhouse gas emissions
- Reducing the carbon intensity of energy is a key objective in long-term climate goals

❖ Goal 7 Target

- By 2030, ensure universal access to affordable, reliable energy services
- By 2030, increase substantially the share of renewable energy
- By 2030, double the global rate of improvement in energy efficiency
- By 2030, enhance international cooperation to facilitate access to clean energy research and technology
- By 2030, expand infrastructure and upgrade technology for supplying sustainable energy services for all in developing countries





1-2. Korea's SDG7 Goals

SDGs(specific) Goals	Purpose	Main indicators
Improvement of Energy Access (SDGs 7.1)	Modern Energy	The number/rate of people dependent on fossil fuel and technology
		The rate of people initially dependent on clean fuel and technology(%)
		Energy policies, rules, strategies, and plans at a national level
	Improving Electricity Supply	The growth rate of electricity supply(%)
		The rate of electricity supply(%)
		The growth rate of income per household(%)
		The saving rate of average fuel cost per household(%)
		The number of creating small businesses
	Action on Climate Change through the Deployment of Renewable Energy (SDGs 7.2)	Renewable Energy
The expanding range(number) of renewable energy in other areas		
The number of constructing or improving renewable energy infrastructure		
The number of introduced systems of supplying and vitalizing renewable energy		
Generating electricity from renewable energy(kWh)		
The number of advisors, beneficiary governments, companies, or trainees related to renewable energy		
The number of household available to use energy services against climate		
Improvement for Energy Efficiency and Electricity Quality through Technical Cooperation (SDGs 7.3, 7.a, 7.b)	Electricity Quality	The decreasing rate of frequency changes(%)
		The decreasing rate of power-cut or the hour of power outage, Or the shortened time of power outage
		The increasing time for electricity supply per day
	Energy Efficiency (EE)	The decreasing rate of electricity loss(%)
		The decreasing rate of electricity power consumption(%)
		The number of expanding and introduced new technologies



1-3. Energy Access is key for poverty reduction

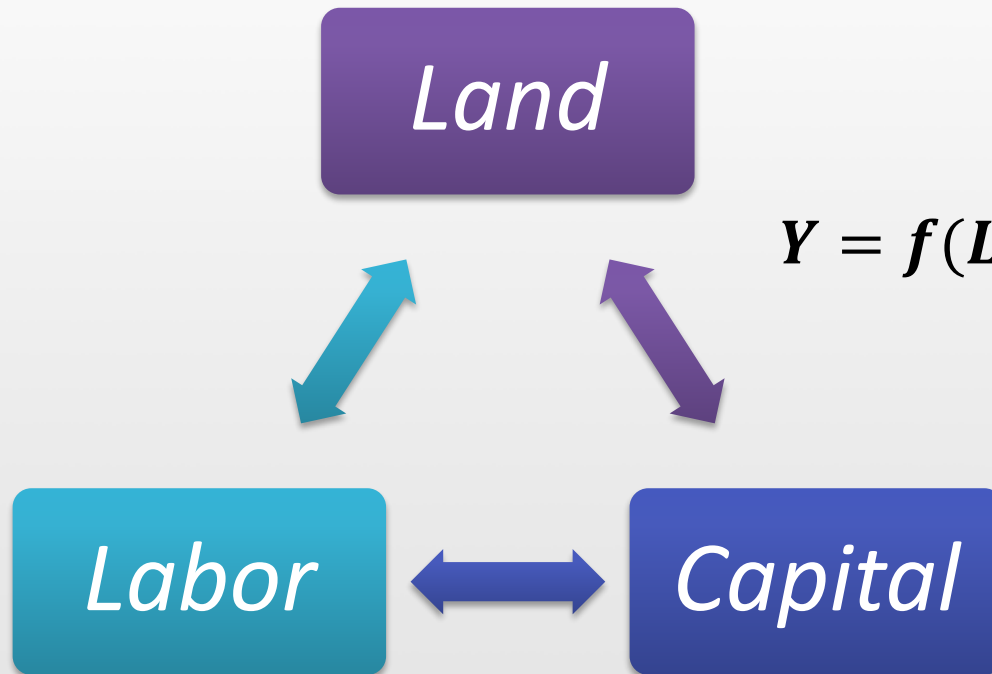
❖ Energy contributes to reducing poverty.

- Increasing productivity
- Upgrading quality of products produced in less developed countries(LDC's)
- Lack of access to reliable energy sources is a severe impediment to sustainable economic growth and human development
- Lack of access to modern and sustainable energy is a major cause of environmental degradation in LDC's
- Lack of energy is a major cause of poverty and poverty-related environment destruction

1-4-1. Consideration for achieving SDG7 in LDC's

- ▶ 3 key elements for economics growth and SDG7:

Land, Labor, Capital



$$Y = f(\textit{Land}, \textit{Labor}, \textit{Capital})$$

1-4-2. Consideration for achieving SDG7 in LDC's

Capital

- ❖ Lack of capital in LDC's
- ❖ Lack of “human capital”
 - Experts, Technicians, Researchers who has knowledge and managerial know-how
- ❖ Find the way of getting “Capital”
 - Provision of Energy services(oil, gas, electricity services) is
 1. increasingly sophisticated and technology-intensive
 2. (often) beyond developing country capacity



1-5. What is energy services?

- ❖ **Required in each step of the energy process from the location of the energy sources to its distribution to final consumer**

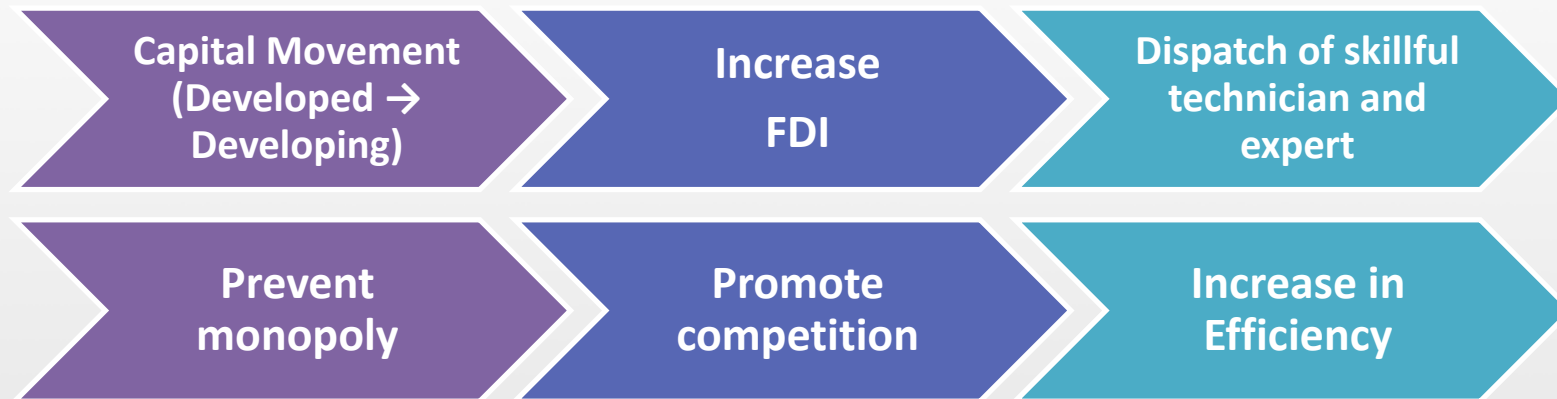
- ❖ **What do energy services include?**
 - Resource identification and development
 - Provision of O&M services
 - Operation of energy sources (eg, gas fields) or production-related activities (eg, power generation)
 - Transmission and distribution of energy
 - Storage of energy
 - Management (balancing) of wholesale supply and demand
 - Energy trading
 - Energy management and efficiency

- ❖ **Energy sector mixes goods and services.**

1-6. Advantages of Trade in energy services



- ❖ A link for conveying new technology, new idea, and new management mechanism, etc.



- **Developing countries will solve market problems by exporting their resources and accept advanced technology and capital by importing. ⇒ Achieve economic growth and SDG7!**

1-7. Disadvantages of Trade (Limitation)

- ❖ Advanced technology and companies may exclusively dominate the national market in developing countries. (*Monopoly*) → Hindering its economic development
- ❖ Developing countries will have limits in opening their own energy market because its sector is protected by government and large scale of investment since its network business characteristics.
- ❖ The concept that energy industry should be led by its government in developing countries is widespread in order to secure energy. (ex. *Blackout in California, 2001*)
- ❖ There are countries that are geopolitically impossible to trade between nations; Korea and Japan.

★ Limitation of Energy Service Trade under the WTO System

- ❖ Under the WTO system, limitations for energy service trade as follows;
 - Requirements of nationality, foreign investment limit, discrimination of foreign suppliers legal format for entrepreneurs, acknowledged monopoly, impossibilities of trading electronic information across borders, etc.



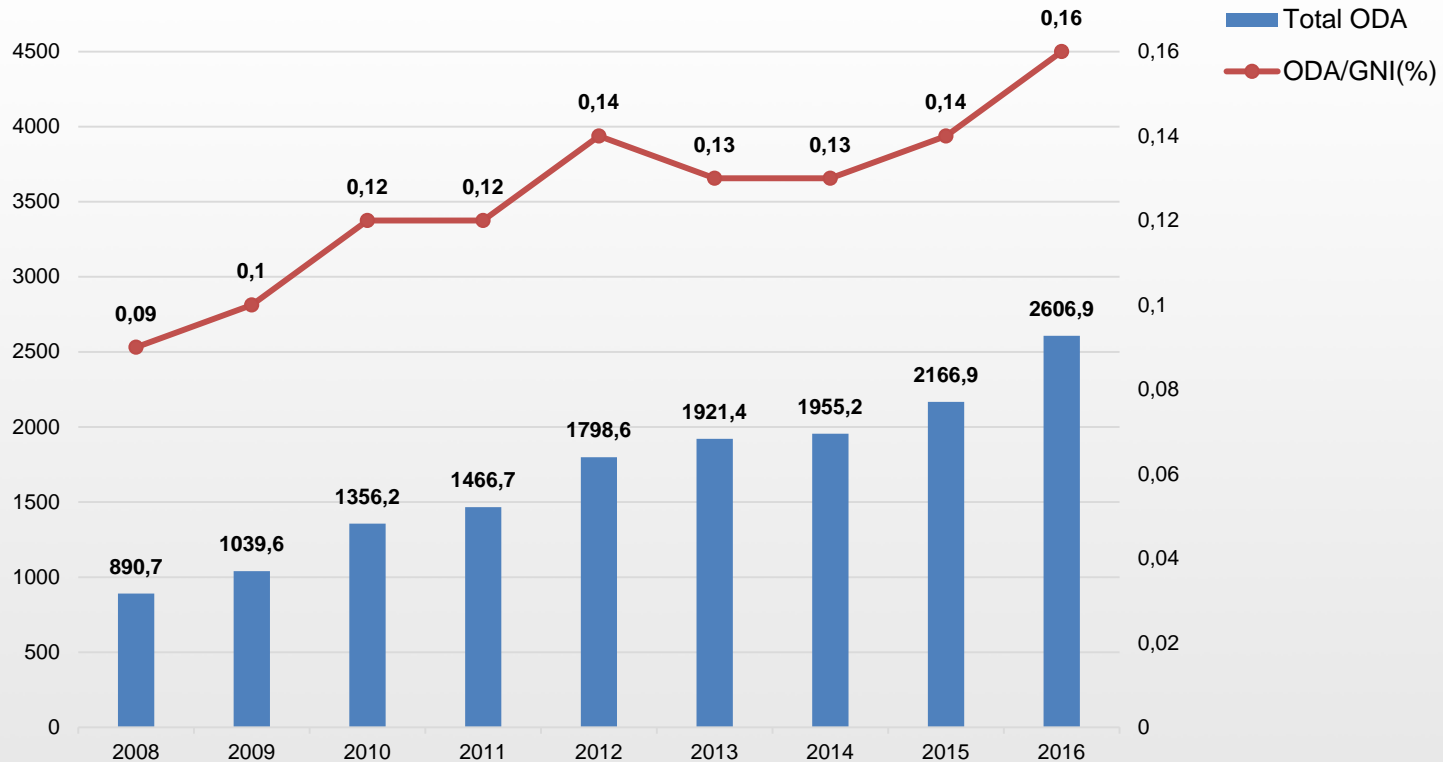
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Korea's Endeavor for SDG7 in LDC's

2-1. Implementation Performance of Korea ODA

◎ The Status of the Annual Support

Total Net ODA in % GNI, 2008-2016 (Net Disbursements, USD million)



※ Commitment : Expressing the intention of the aid as a pledge or a corresponding contract

※ Disbursement : Giving a recipient country or organization promised funds

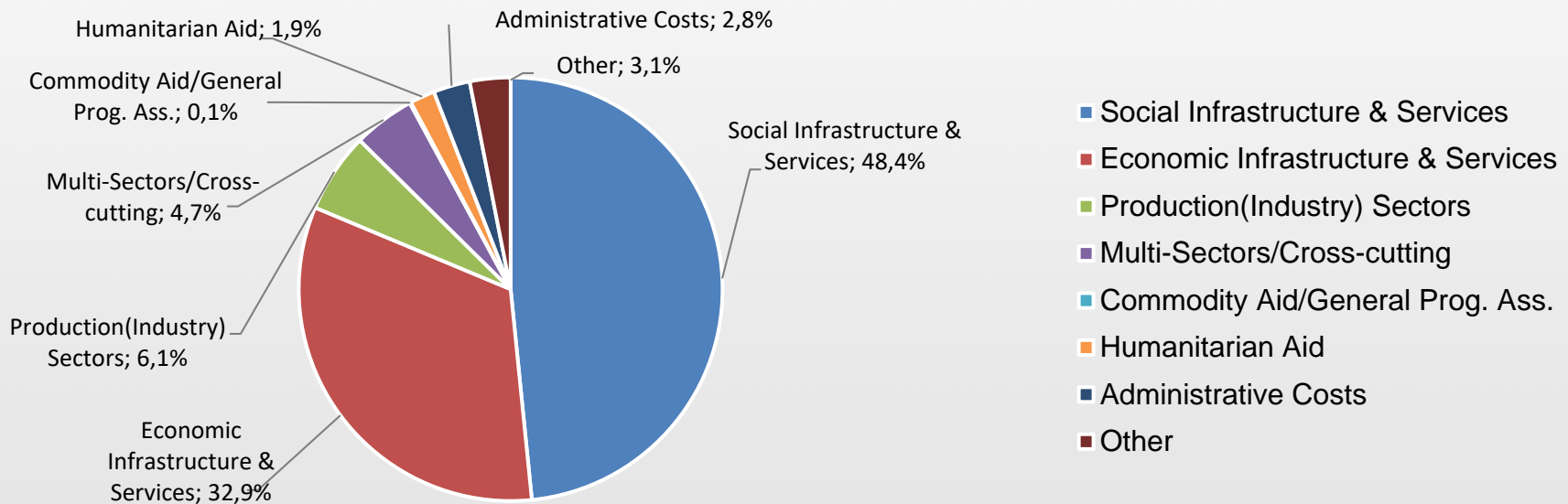
* Sources : OECD Stats.

* Q&A for the other statistics of ODA : *Economic Cooperation Dept. The Export-Import Bank of Korea (+82-2-6255-5679)*

2-2. Implementation Performance of Korea ODA

◎ The Status of the Sectoral Support (Commitments, USD million)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	675.49	1,053.27	1,454.97	1,449.41	1,809.59	1,623.63	1,752.99	2,238.20	2,378.33	2,311.67
Energy	4.98 (0.7%)	74.6 (7.1%)	182 (12.5%)	119.18 (8.2%)	184.84 (10.2%)	206.12 (12.7%)	56.85 (3.2%)	159.82 (7.1%)	8.84 (0.4%)	97.96 (4.2%)



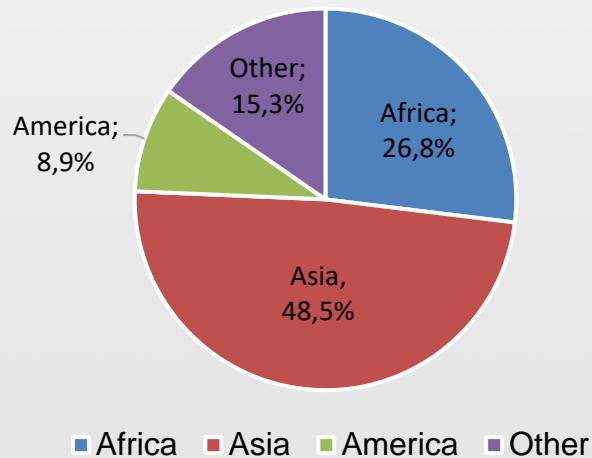
* Sources : OECD Stats.

2-3. Implementation Performance of Korea ODA

◎ The Status of the Regional Support (Net Disbursements, USD million)

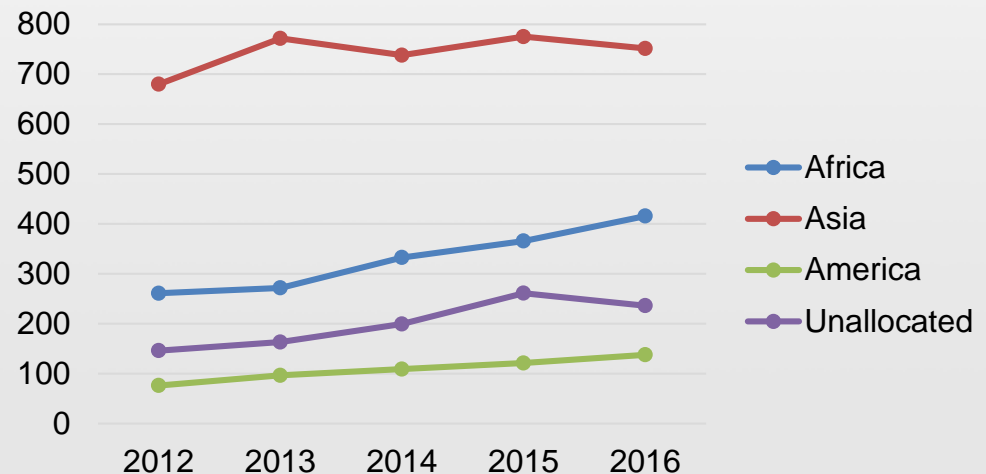
	2012	2013	2014	2015	2016
Africa	261.01 (22.1%)	271.72 (20.7%)	332.72 (23.8%)	365.74 (23.9%)	415.64 (26.8%)
Asia	679.92 (57.5%)	771.72 (58.9%)	738.02 (52.9%)	775.33 (50.6%)	751.47 (48.5%)
America	76.20 (6.4%)	96.48 (7.4%)	109.08 (7.8%)	121.20 (7.9%)	137.81 (8.9%)
Unallocated	146.06 (12.3%)	136.16 (12.5%)	199.51 (14.3%)	261.13 (17.0%)	236.21 (15.3%)
Total	1,183.2	1,309.6	1,395.77	1,531.14	1,548.47

Regional Aid Share Of Bilateral ODA, 2016
(Net Disbursements, %)



* Sources : OECD Stats.

Regional Aid Share Of Bilateral ODA, 2012-2016
(Net Disbursements, USD million)



* Sources : OECD Stats.



2-4. Primary Sectors of Energy Support in 2016

◎ The Status of ODA by Project, 2016

- ❖ **The expense of ODA has been concentrated on electricity infrastructures, power transmission and distribution, renewable energy, etc.**
 - USD 11.5 million for the Electricity Transmission and Transformation Expansion Project in Iringa-Shinyanga, **Tanzania**
 - USD 7.22 million for the Electricity Infrastructure Construction Project in Sululta-Gurajate, **Ethiopia**
 - USD 6.12 million for the Electricity Transmission and Distribution Establishment Project, and Solar PV Generation in **Mozambique**
 - USD 9.38 million for the Electricity Transmission Infrastructure Development Project in Bibiyana-Kaliakoir, **Bangladesh**
 - USD 3.35 million for the Solar PV Power and Electricity Access Project in **Myanmar** (2014-2017)
 - Implementing **Solar PV** Projects in Cambodia, Indonesia, Morocco, Laos, etc.
 - **Energy Infrastructures** Construction Projects in Sri Lanka, Egypt, Ethiopia, Cambodia, Uzbekistan, Indonesia, etc.
- ❖ **84 projects in 2016 and 83 projects in 2015 have been implemented.**
- ❖ **In 2017, the ongoing projects are...,**
 - USD 430 million for the Energy Efficiency Improvement in Electric Distribution Project in **Iraq** (2012-2017)
 - USD 260 million for HRD Infrastructure Plan Establishment for **Ghana** Transmission System (2015-2017)
 - USD 600 million for Electrical Distribution Networks Construction & Health and Environment Improvement Project for the remoted area in **Tajikistan** (2017-2020)
 - USD 800 million for Green Technology Research Development Project in **Morocco** (2017-2020)

2-5. Examples of ODA Project

◎ Example: Off-Grid PV Demonstration Project in Sankan village, Myanmar

- ❖ **Purposes:** Enhancing the level of electrification in agricultural areas
- ❖ **Expectation:** 1) For 217 households (977 people) to access electricity
2) Reduction of energy cost (Cheaper than Kerosene and Diesel)
- ❖ **Features:** 20% of the investment costs was contributed by residents.
- ❖ **Expected Problems:** 1) Negotiation for the contribution to the investment
2) Residents lack of knowledge about managing and maintaining the project

< Analysis >

Business Name	Activities	Outputs	Purposes/Outputs	Goals/Impacts
Off-Grid Renewable Energy Demo-Project	<ul style="list-style-type: none"> - Research - Install facilities - Improve the capacity of the government and people 	<ul style="list-style-type: none"> - Expand the electricity Infrastructure based on Solar module - Plan the investment for the Off-Grid Renewable Energy Project 	<ul style="list-style-type: none"> - Supply electricity to 1,500 agricultural areas (Mandalay, Magway, Sagaing, etc.) 	<ul style="list-style-type: none"> - Increase electricity distribution in agricultural areas



2-6. Conclusion and Remark

- ❖ **Energy Access is the key for poverty reduction and economic growth**
- ❖ **Developing countries need to find out the way of getting “Capital” from developed countries**
- ❖ **Trade in energy services is important for achieving SDG7**
- ❖ **But there is obstacles to overpass for enhancing trade in energy services**
- ❖ **ODA can be a good way of transferring capital and technology for achieving SDG7**



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Thank You