

Japanese Coal Policy and the promotion of cooperates between Australia and Japan in Coal Field

Japan-Australia Coal Technology Workshop

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Today's topics

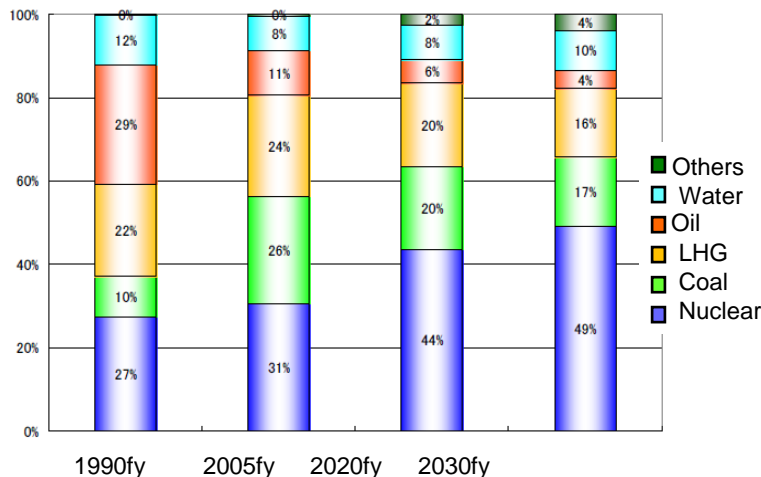
- 1. Coal position of Primary Energy Supply in Japan**
- 2. Bases of Japanese coal policy**
- 3. Global Trade**
- 4. Present and Future on Coal Cooperation between Japan and Australia**

1.Coal Position of Primary Energy Supply in Japan

- "Long-Term Outlook for Energy Demand and Supply" was stimulated by Demand and Supply Sub-committee of the Advisory Committee on Energy and Natural Resources in May, 2008.
- In the prospect of 2030, the final energy consumption of the energy-saving effect of three cases which are "Current fixed case", "Effort continuance case", and "Maximum introduction case" was estimated based on the level of progress and the introduction of the energy technology in each section aiming its goal mentioned in "New National Energy Strategy".
- Coal has each different case but it is forecasted to use 18-21% of the Primary Energy Supply as of 2030.

(Million KL oil equivalent)

JFY	2005		2020						2030					
			Current Fixed Case		Effort Continuance Case		Maximum Introduction Case		Current Fixed Case		Effort Continuance Case		Maximum Introduction Case	
Supply of the Primary Energy	587		651		601		561		685		601		526	
Energy Sources	Actual Number	Compo.	Actual Number	Compo.	Actual Number	Compo.	Actual Number	Compo.	Actual Number	Compo.	Actual Number	Compo.	Actual Number	Compo.
Oil	255	43%	248	38%	232	39%	209	37%	245	36%	220	37%	183	35%
LPG	18	3%	19	3%	18	3%	18	3%	19	3%	19	3%	18	3%
Coal	123	21%	136	21%	121	20%	110	20%	146	21%	123	20%	95	18%
Natural Gas	88	15%	107	16%	87	14%	79	14%	129	19%	94	16%	73	14%
Nuclear	69	12%	99	15%	99	17%	99	18%	99	15%	99	17%	99	19%
Water	17	3%	19	3%	19	3%	19	3%	19	3%	19	3%	19	4%
Geothermal	1	0%	1	0%	1	0%	1	0%	1	0%	1	0%	1	0%
New Energy & Others	16	3%	22	3%	22	4%	26	5%	26	4%	26	4%	38	7%



Power Supply Composition based on the Maximum Introduction Case (Power Energy Basis).

-Coal

The power generation efficiency of the stock basis is improved to about 3% by introducing a high effective power generating equipment.

2.Bases of Japanese coal policy

- (1) Development and international dissemination of coal utilization technologies
 - . Development of innovative zero-emission coal-fired power generation
 - . Improved coal-fired power generation efficiency
 - . Carbon dioxide capture and storage (CCS)
 - . International cooperation on clean coal technology (CCT)
 - . Model projects
 - . Human resources development
 - . Coal-fired facility diagnosis

- (2) Ensuring of stable supply of overseas coal
 - . Almost zero self-sufficiency
 - . World's biggest coal importer
 - . Dependent on overseas sources to meet 99.3% of domestic coal demand
(Domestic output peaked at 50 million tons in the 1960s, and is presently around 1 million tons.)
 - . Contribution to stable coal output through transfer overseas of advanced coal production and safety technologies developed under severe geological conditions

3. Global trade in coal

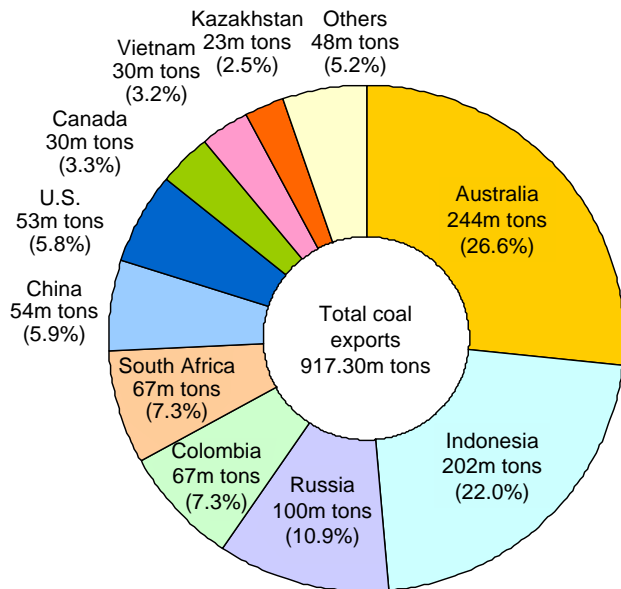
Japan is the world's largest coal importer, importing an estimated 180 million tons in 2007 (equivalent to around one fifth of the total global trade in coal).

192 million tons in 2008

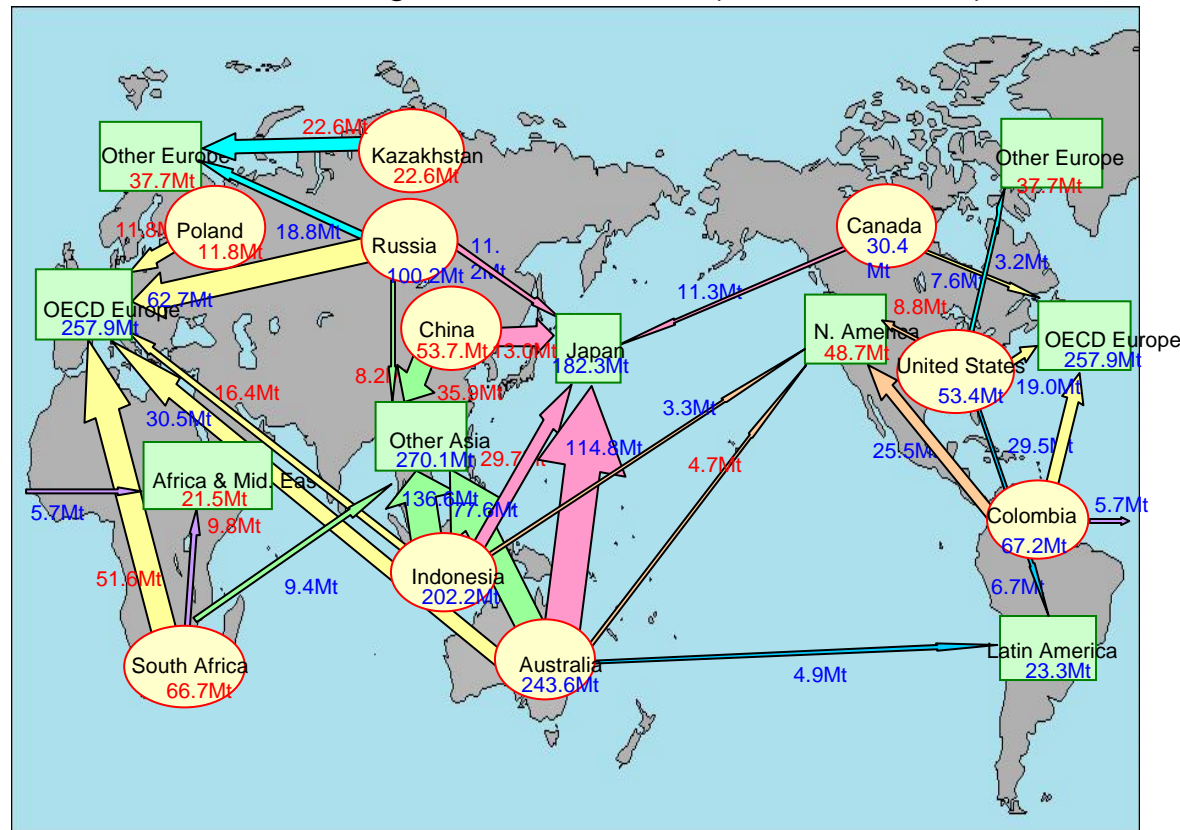
Main coal importers

Rank	Country	Imports (m tons)	Share (%)
1st	Japan	182	20
2nd	Korea	88	10
3rd	Taiwan	69	8
4th	India	54	6
5th	U.K.	50	6
Total	World	892	100

Top 10 coal exporters



Main flows in global trade in coal (2007 estimates)



Note 1: Volume of trade based on estimates for 2007.

Note 2: Exporting countries' exports do not match total exports by destination due to statistical error.

Note 3: Quantities of less than 3 million tons are not shown.

Source: IEA, "Coal Information 2008"

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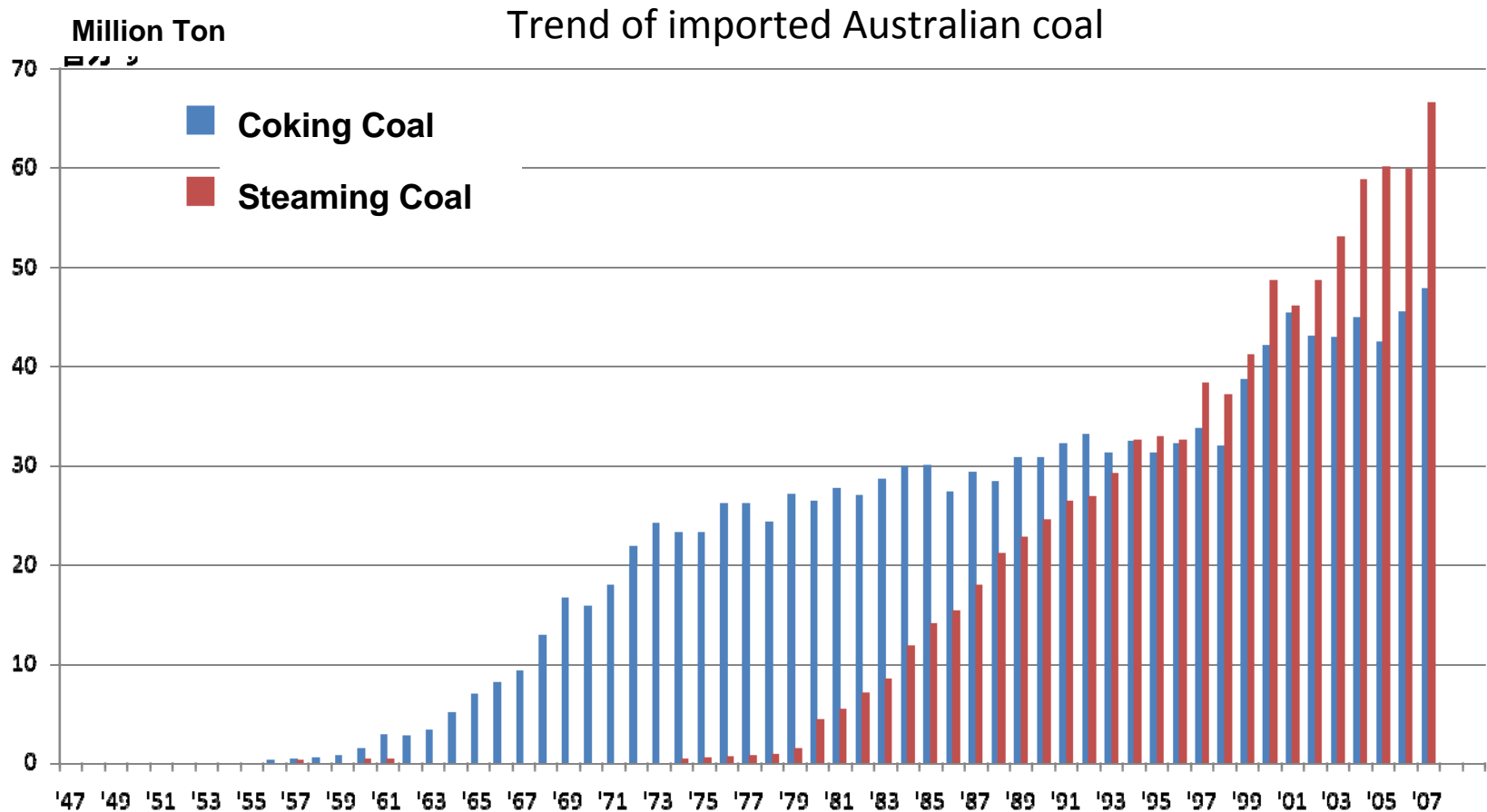
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JP, 5/03/2009

4-1. History of Coal Trade

- The import of coking coal from Australia began in the latter half of the 1950's. Australia has the largest market share of coking coal in Japan since the '75 year, and about 45 million tons a year are imported now.
- The import of steaming coal from Australia began from about the middle of the '70 year.
- Australia has the largest market share in Japan at the following, and about 70 million tons a year are imported now.
- Total share of Australian coal is over 60 percent in Japan.
- 40-50% of export coal from Australia has been dispatched for Japan.



4-2. History of Cooperation on Coal Technology

Year	Project	Organizations
1981.1993	.Cooperation of coal liquefaction	NEDO(Nippon BCL, Private com. - VIC)
1992.2004	.Study of new exploration technology	METI. NEDO(JCOAL) – QLD, NSW
1993.2008	.R & D of safety technology (Gas)	METI.JCOAL –CSIRO, Private com.
1998.2002	.R & D of Ultra Clean Coal (UCC)	METI.JCOAL – CSIRO (MHI, Idemitsu Kosan.co, Kyushu Electric Power.co)
1998.2003	.R & D of production technology (Rapid Roadway)	METI(JCOAL) - CSIRO, Private com.
2000.2004	.Development of rehabilitation technology	METI.NEDO(JCOAL) - CSIRO, Private com.
2006.2008	.Development waste coal gasification technology	JCOAL(IHI) - CSIRO
2008.2011	.CO2 storage in Coal seams	JCOAL - CSIRO
2008.2016	.Project of oxyfuel and CCS	METI - DRET.QLD (IHI.JPOWER.Mitsui.co - CS energy.ACA etc)

4-3. Recent Joint Statement by Japan and Australia on Coal Issues

(1) Joint Statement by Japan and Australia on the Enhancement of Cooperation on Climate Change and Energy Security (September 9, 2007)

(Prime Minister Shinzo Abe of Japan and Prime Minister John Howard of Australia)

- . oxy-fuel combustion with CO₂ storage (Callide A project)
- . CO₂ storage in Coal seams
- . Stable coal supplies to Japan and maintenance and operation of coal infrastructure

(2) Joint Statement by Japan and Australia on "Comprehensive Strategic, Security and Economic Partnership" (12 June 2008)

(Prime Minister Yasuo Fukuda of Japan and Prime Minister Kevin Rudd of Australia)

- . oxy-fuel combustion with CO₂ storage (Callide A project)
- . developing innovative technologies to shift to a low carbon society
- . stable and secure supply of energy and minerals resources
- . infrastructure in support of energy and minerals exports

4-4. Bilateral Dialogue on Energy Resources and Coal between Japan and Australia

. Intergovernmental conversation.

. Japan-Australia High-Level Group on Energy and Mineral Consultation

(holding once a year)

. The 31st meeting was held in August, 2007 at Tokyo.

Chief of representative;

Mr. Hartwell (Director-General of DRET)

Mr. Hiraku (Director-General of ANRE)

. The 32st meeting will be held in June, 2009 at Darwin.

Chief of representative;

Mr. Hartwell (Director-General of DRET)

Mr. Shibota (Director-General of ANRE)

. Private company conversation.

. Australia - Japan COAL CONFERENCE (AJCC)

(holding at every other year)

The 29th meeting was held in October, 2008 at Sydney.

(JCD, FEPC, JISF – ACA)

The next meeting will be held in 2010.

4-5-(1). Future of Coal Cooperation between Japan and Australia

.Policy Dialogue on Coal + CCT + CCS.at the different occasion of HLG.

. METI.DG of Resources and Fuel Dept, Coal Division . / DRET.Resources Division.

.Promotion of present cooperation Project in coal field between two countries

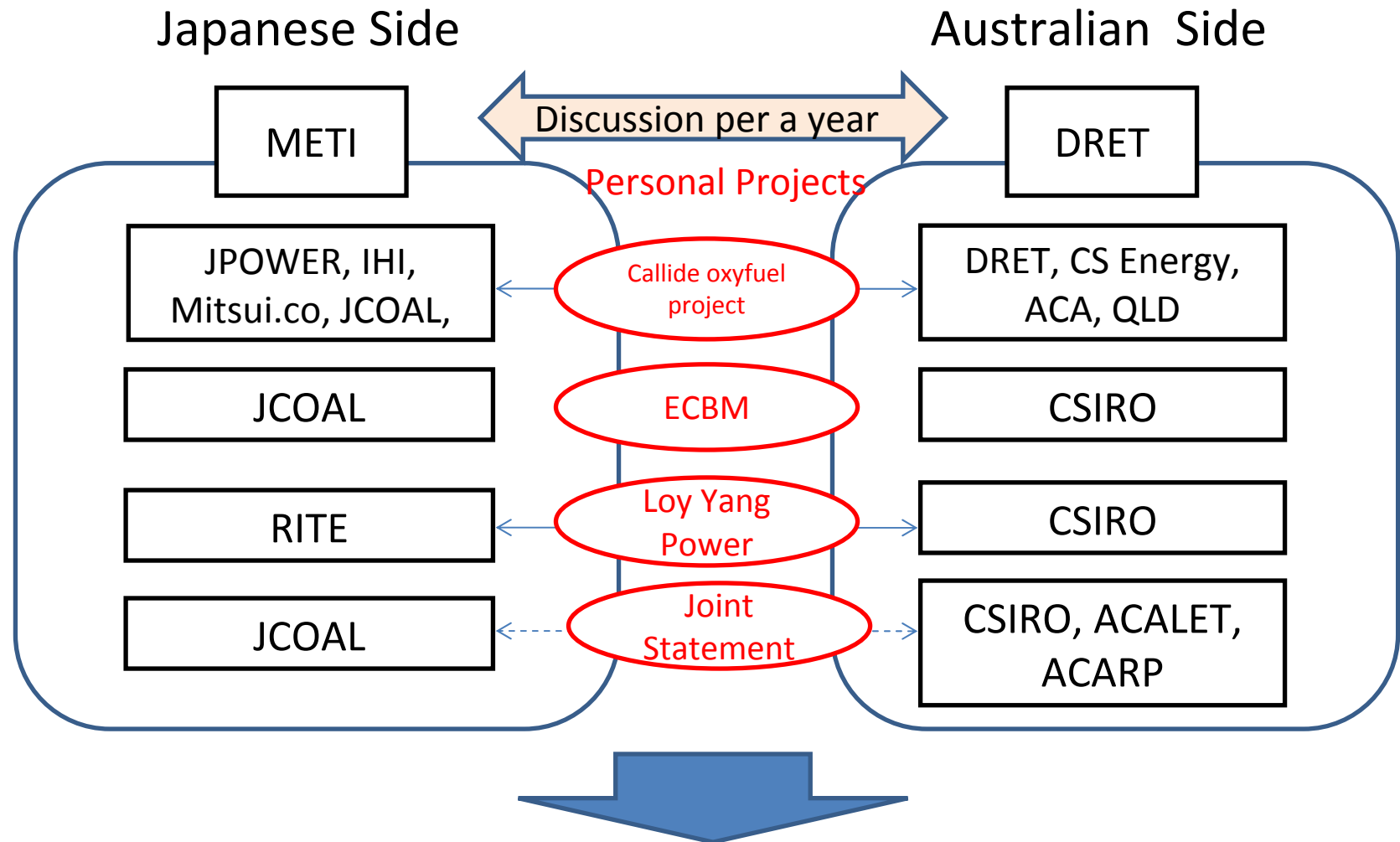
. JCOAL / ACA

. JCOAL / CSIRO

. AIST (National Institute of Advanced Industrial Science and Technology) / CSIRO

. RITE / CSIRO

4-5-(2). Future of Coal Cooperation between Japan and Australia



Expansion of Cooperation Projects between Japan and Australia

4-6. Japanese Side's New Proposal of Specific Cooperation Projects.

- . The joint research on coal geological fields
 - . NEDO,
- . The cooperation of the private company between Japan and Australia
 - . JCOAL,
- . Basic cooperation of CCS
 - . AIST, RITE,
- . The research and development that utilized lignite
 - . NSCE, MHI, Kyushu Electric Power CO., Japan Gas Association,

4-7. Schedule of 2009

24 February : Meeting between METI and Mr. Hartwell Director-General of DRET

12 March : Workshop by Japan-Australia Coal Society in Tokyo.
<Australian side>
Representative of Australia embassy in Tokyo
Representative of state governments(QLD,VIC)
<Japanese side>
METI , NEDO, JCOAL, AIST, RITE etc...

24 June : Japan-Australia High-Level Group on Energy and Mineral Consultation

25 June : Japan-Australia Coal Policy Dialogue
<Australian side>
DRET, GCCSI, NSW, QLD, VIC, NLECI, CO2CRC etc...
<Japanese side>
METI , NEDO, JCOAL, AIST, RITE, NSCE etc...

For the future .Japan proposed annual meeting.