

2019 Northeast Asia International Conference for Economic Development
Eleventh Japan–Russia Energy and Environment Dialogue in Niigata
13:30–15:30 Round 1: Energy Resources

China's Energy Import Trends and Cooperation

Shixian GAO
Deputy Director General, Research Professor
Energy Research Institute, National Development and Reform Commission, China

Tel.: +86-10-6390-8471
Fax: +86-10-6390-8568
email: gaoshixian@eri.org.cn

January 30, 2019
Niigata, Japan



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission

Outline

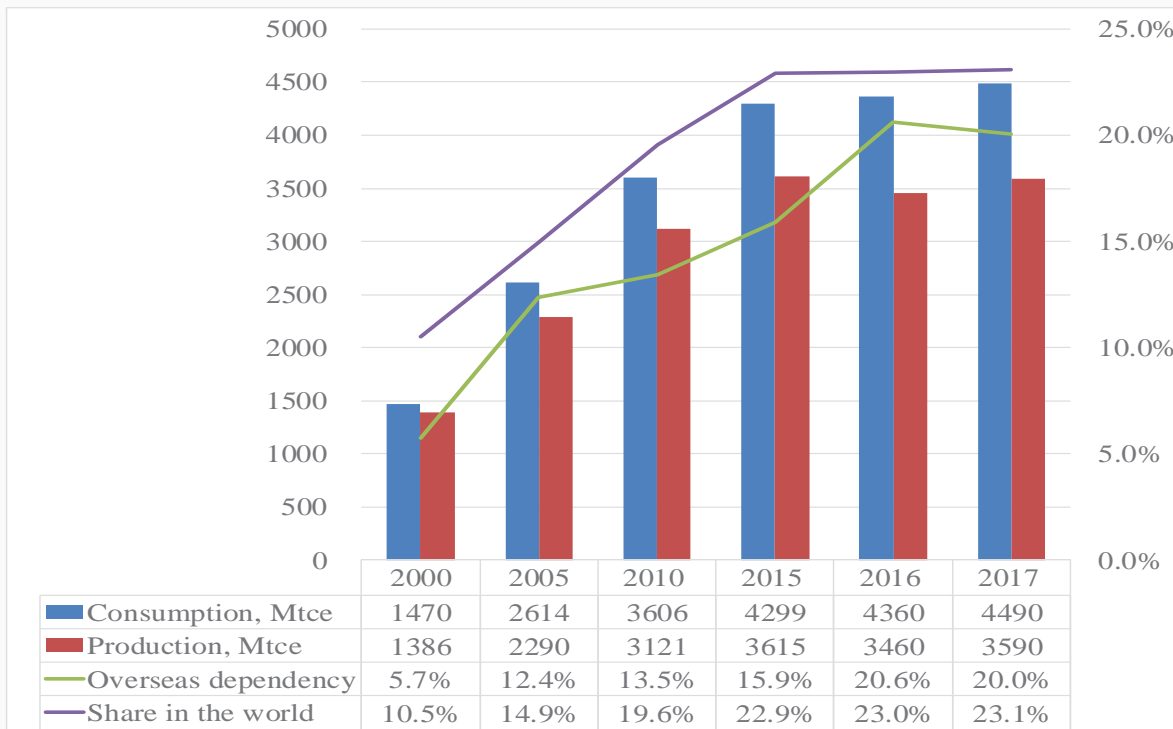
1. China's energy present situation
2. China's energy trends
3. China's key areas of energy cooperation



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission

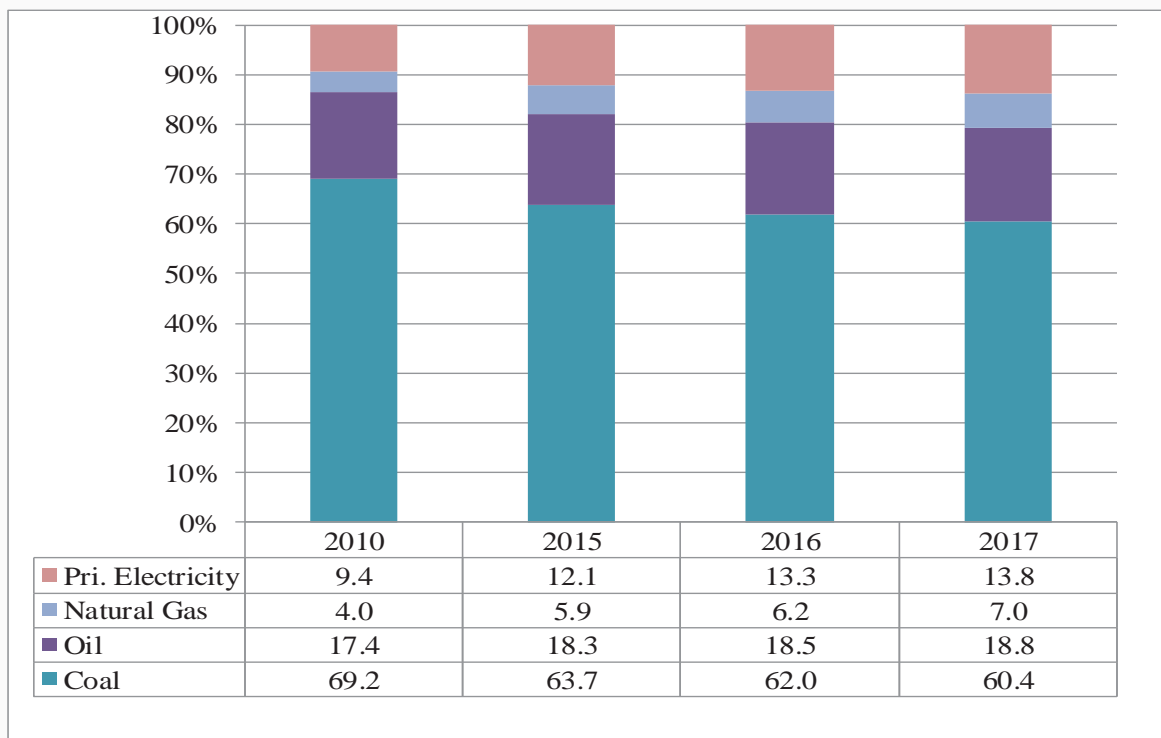
1. Energy present situation in China

--China is the biggest energy user and producer in the world



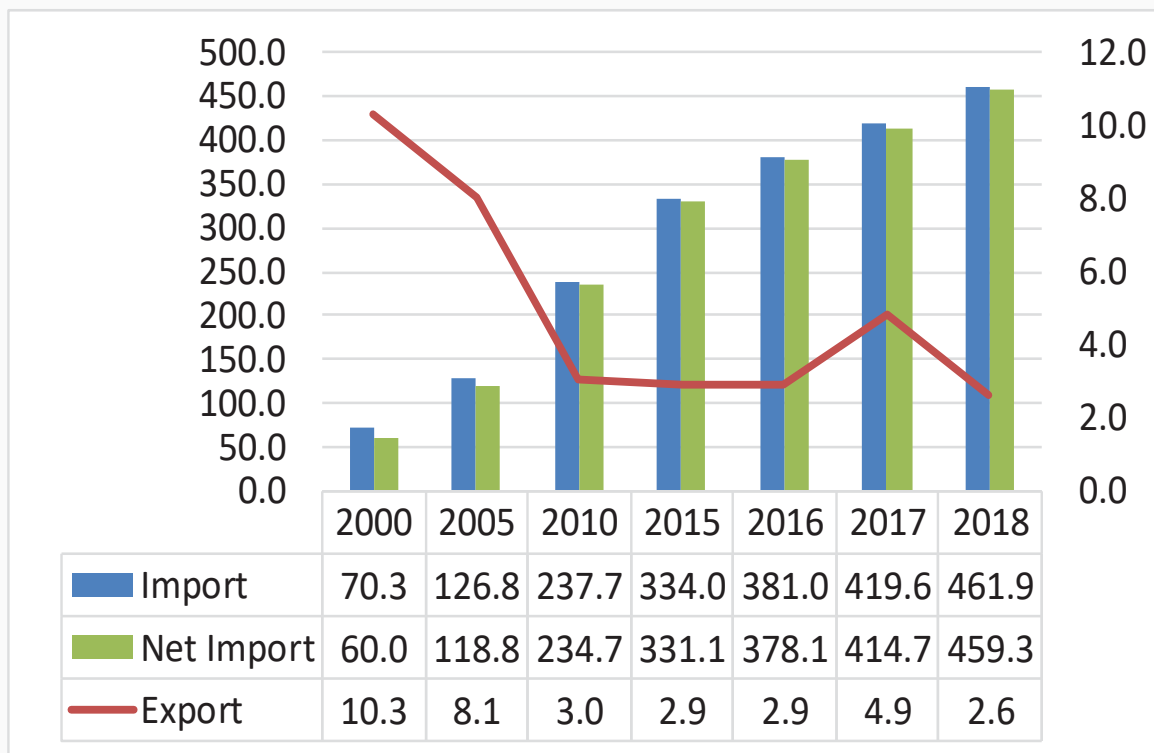
▪ 国家发展和改革委员会能源研究所
 ▪ Energy Research Institute National Development and Reform Commission

The breakdown of energy consumption by type



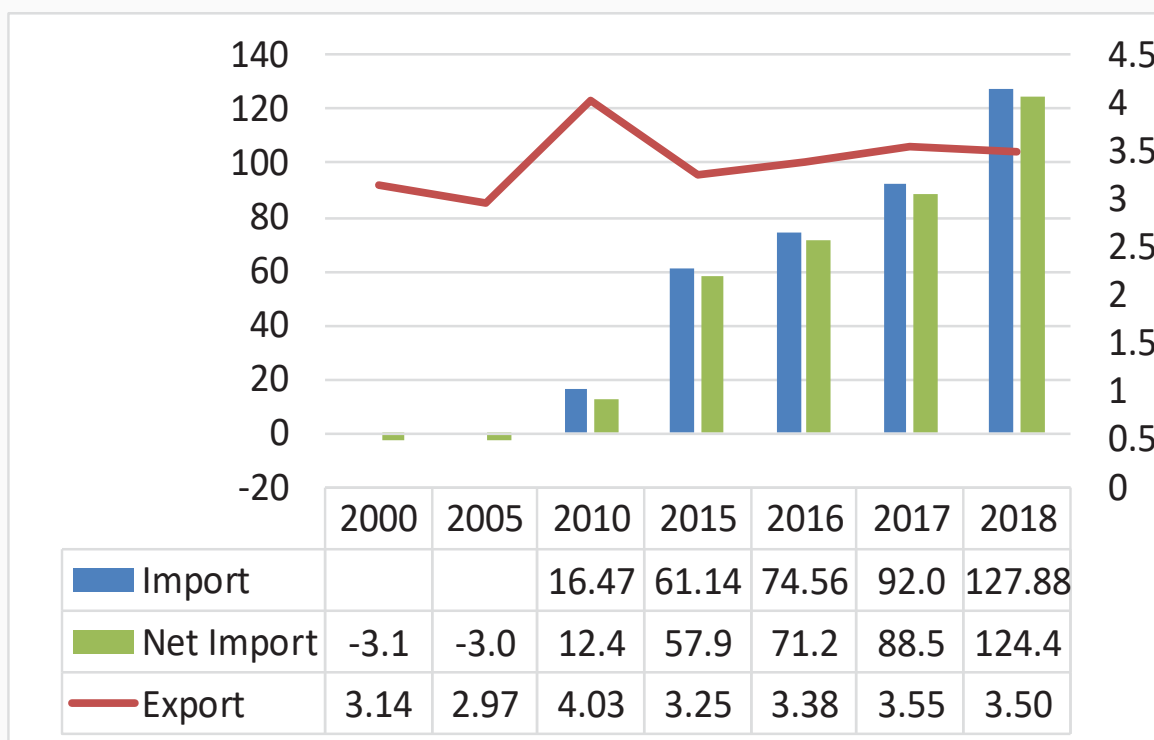
▪ 国家发展和改革委员会能源研究所
 ▪ Energy Research Institute National Development and Reform Commission

Import & Export of Crude Oil in China (Mt)



▪ 国家发展和改革委员会能源研究所
 ▪ Energy Research Institute National Development and Reform Commission

Import & Export of Natural Gas in China (Gm³)



▪ 国家发展和改革委员会能源研究所
 ▪ Energy Research Institute National Development and Reform Commission

2. China's energy trends

Indicators of energy economics in China

	Growth rate		Energy save rate	Elasticity Coefficient
	Energy consumption	GDP		
2000-2005	12.20%	9.80%	-2.20%	1.245
2005-2010	6.70%	11.30%	4.10%	0.593
2010-2015	3.60%	7.80%	3.90%	0.462
2015-2017	2.20%	6.79%	4.30%	0.324



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission

Global energy demand will continue to grow at a certain rate

	2000	2016	2025	2030	2035	2040	2016-2040	
							Change	CAAGR*
North America	2 678	2 615	2 672	2 660	2 652	2 668	53	0.1%
United States	2 270	2 154	2 188	2 162	2 132	2 122	-32	-0.1%
Central & South America	449	666	736	794	863	936	270	1.4%
Brazil	184	290	319	345	375	405	115	1.4%
Europe	2 028	1 965	1 887	1 831	1 784	1 762	-203	-0.5%
European Union	1 693	1 594	1 485	1 414	1 350	1 312	-282	-0.8%
Africa	501	804	953	1 056	1 166	1 289	486	2.0%
South Africa	111	139	143	147	151	157	17	0.5%
Middle East	353	743	879	992	1 117	1 226	483	2.1%
Eurasia	743	880	919	945	981	1 016	136	0.6%
Russia	620	699	711	721	739	755	56	0.3%
Asia Pacific	3 009	5 699	6 679	7 226	7 684	8 068	2 369	1.5%
China	1 143	3 006	3 439	3 631	3 742	3 797	791	1.0%
India	441	897	1 228	1 466	1 694	1 901	1 003	3.2%
Japan	518	431	414	402	392	384	-48	-0.5%
Southeast Asia	385	643	806	892	977	1 062	419	2.1%
Bunkers**	273	388	458	506	559	617	230	2.0%
World	10 035	13 760	15 182	16 011	16 806	17 584	3 824	1.0%

* Compound average annual growth rate. ** Includes international marine and aviation fuels.



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission

China's energy demand

China: Current Policies and Sustainable Development Scenarios

	Energy demand (Mtoe)						Shares (%)		CAAGR (%)	
	2025	2030	2040	2025	2030	2040	2040		2017e-40	
	Current Policies			Sustainable Development			CPS	SDS	CPS	SDS
TPED	3 633	3 936	4 391	3 241	3 168	2 968	100	100	1.6	-0.1
Coal	2 005	2 068	2 143	1 642	1 326	735	49	25	0.5	-4.1
Oil	733	795	855	637	590	448	19	15	1.7	-1.1
Gas	371	460	608	360	446	535	14	18	5.0	4.4
Nuclear	144	188	265	167	245	387	6	13	6.3	8.1
Hydro	109	116	129	114	130	149	3	5	1.1	1.7
Bioenergy	133	140	153	142	149	205	3	7	1.3	2.6
Other renewables	136	169	238	179	282	508	5	17	5.5	9.1

Source: The World Energy Outlook 2018, IEA



• 国家发展和改革委员会能源研究所
• Energy Research Institute National Development and Reform Commission

China's import of crude oil

	2000	2005	2010	2015	2016	2017
MiddleEast	53.6%	47.2%	47.1%	50.7%	48.0%	43.4%
Africa	24.1%	30.3%	29.6%	19.2%	17.8%	19.7%
Europe& Eurasia	6.7%	11.5%	10.8%	14.9%	16.4%	17.5%
America	0.5%	3.4%	8.8%	12.7%	13.8%	15.9%
Asia & Pacific	15.1%	7.6%	3.7%	2.5%	4.0%	3.6%
Total, Mt	70.27	127.08	239.31	335.49	381.04	419.97
Saudi Arabia	8.2%	17.5%	18.6%	15.1%	13.4%	12.4%
Russia	2.1%	10.1%	6.4%	12.6%	13.8%	14.2%
Angola	12.3%	13.7%	16.5%	11.5%	11.5%	12.0%
Iraq	4.5%	0.9%	4.7%	9.6%	9.5%	8.8%
Iran	10.0%	11.2%	8.9%	7.9%	8.2%	7.4%
Oman	0.2%	0.1%	0.1%	9.6%	9.2%	7.4%
Brazil	0.3%	1.1%	3.4%	4.1%	5.0%	5.5%
Venezuela	0.0%	1.5%	3.2%	4.8%	5.3%	5.2%
Kuwait	0.6%	1.3%	4.1%	4.3%	4.3%	4.3%
UAE	0.6%	2.0%	2.2%	3.7%	3.2%	2.4%
Share of sub-total	38.8%	59.4%	68.0%	83.3%	83.4%	79.7%

Source: International Petroleum Economics



• 国家发展和改革委员会能源研究所
• Energy Research Institute National Development and Reform Commission

China's key areas of energy cooperation

1. Strengthen policy communication.
2. Strengthen trade unimpeded.
3. Strengthen cooperation in energy investment.
4. Strengthen cooperation in energy production capacity.
5. Strengthen the interconnection of energy infrastructure.
6. Promoting sustainable energy for all.
7. Improving the global energy governance structure.



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission

Conclusion

China's energy demand will keep growth by 2030;
China's energy transition will continue to clean and low/zero energy;
China's energy (in particular crude oil and natural gas) dependency on oversea will go up;
China will keep the open-door policy in energy sector.



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission



Thank you for your kind attention!



▪ 国家发展和改革委员会能源研究所
▪ Energy Research Institute National Development and Reform Commission