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Sino-Russian Oil and Gas Cooperation and Its Implications towards Central Asia

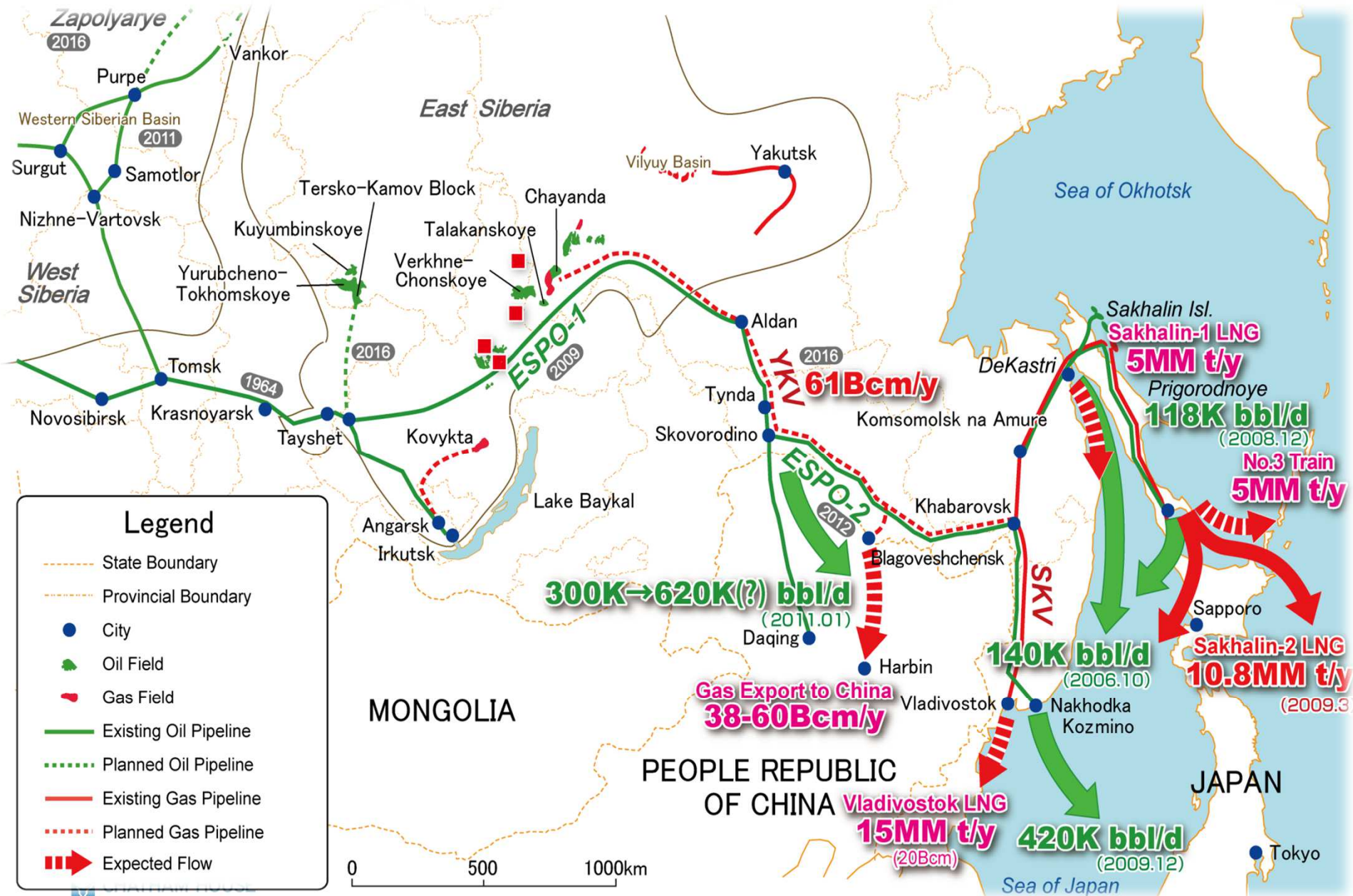
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WIIW Workshop on Connectivity in Central Asia

Vienna, 16 December 2016

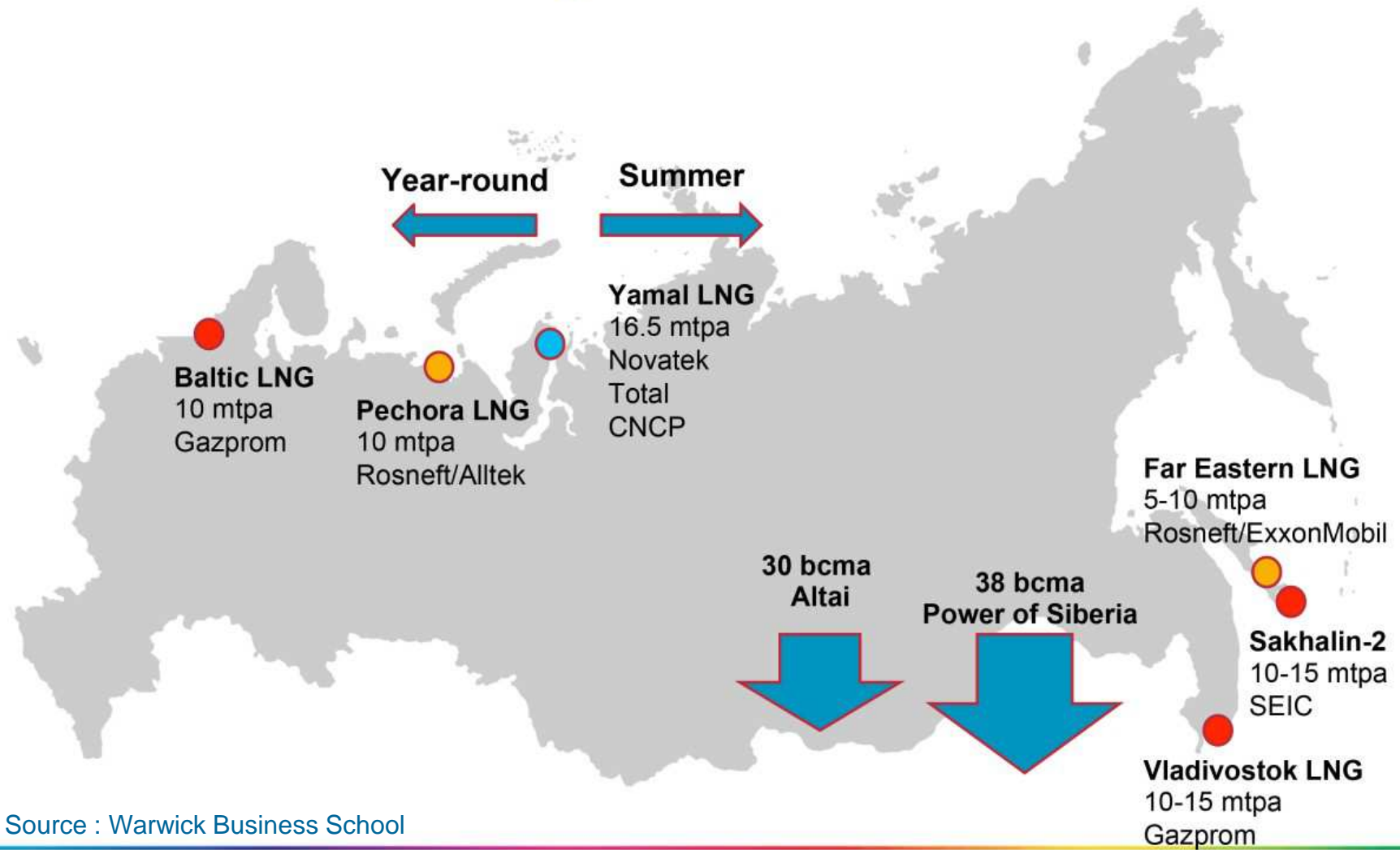
Drastic Increase of Energy Flow from Russia to Asia



Russia's Eastern Gas Programme



Russian LNG Projects



Source : Warwick Business School

New Silk Roads | China is assembling new trade routes, binding other regions closer to it



Sources: Xinhua (Silk Road routes); U.S. Department of Defense, Gazprom, Transneft (pipelines); United Nations (rail entry points)

The Wall Street Journal

China's Gas Demand Projection

unit : bcm/y

	year	2010	2015	2020	2025	2030
RS*	2010	119.9	231.1	297.3	350.7	392.4
HGS*		126.0	242.4	317.5	384.2	438.0
LGS*		114.6	218.7	279.2	315.6	341.1
CNPC	2011	129.0		350.0		500.0
CNPC	2012					550.0
CAE**	2010			250.0		360.0
DRC***	2013			350.0		630.0
DRC	2014			420.0		

Note : RS* means reference scenario, HGS means high growth scenario, LGS means low growth scenario (all prepared by CNPC) ; CAE** means Chinese Academy of Engineering ; DRC*** means Development Research Centre (under the State Council)

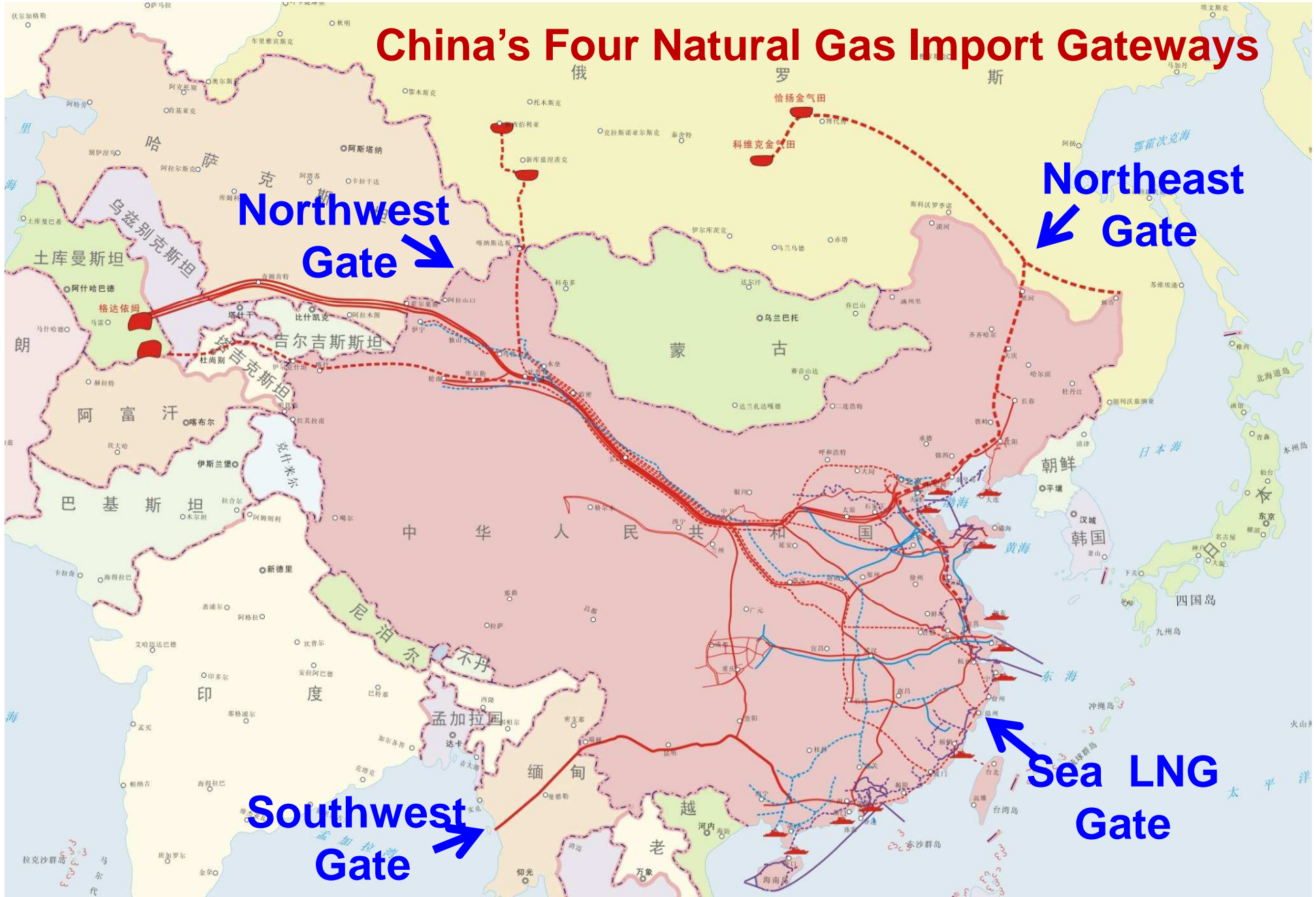
Source : Author's data base

Outlook for China's Gas Market

unit : bcm	2015		2020		2030	
	C	O	C	O	C	O
Conventional	132.0	138.5	170.0	185.0	210.0	230.0
Unconventional	14.9	18.8	31.6	59.7	57.3	116.0
- SG	5.0	6.5	10.0	30.0	20.0	60.0
- CBM	7.9	9.3	11.6	14.7	17.3	26.0
- CTG	2.0	3.0	10.0	15.0	20.0	30.0
Imported LNG	35.0	40.0	60.0	70.0	70.0	80.0
Imported Pipe Gas	40.0	44.0	75.0	80.0	120.0	130.0
Total	224.9	241.3	336.6	394.7	457.3	556.0

Note : C means conservative projection, and O means optimistic projection.
 SG means shale gas CTG means Coal to Gas.

China's Four Natural Gas Import Gateways

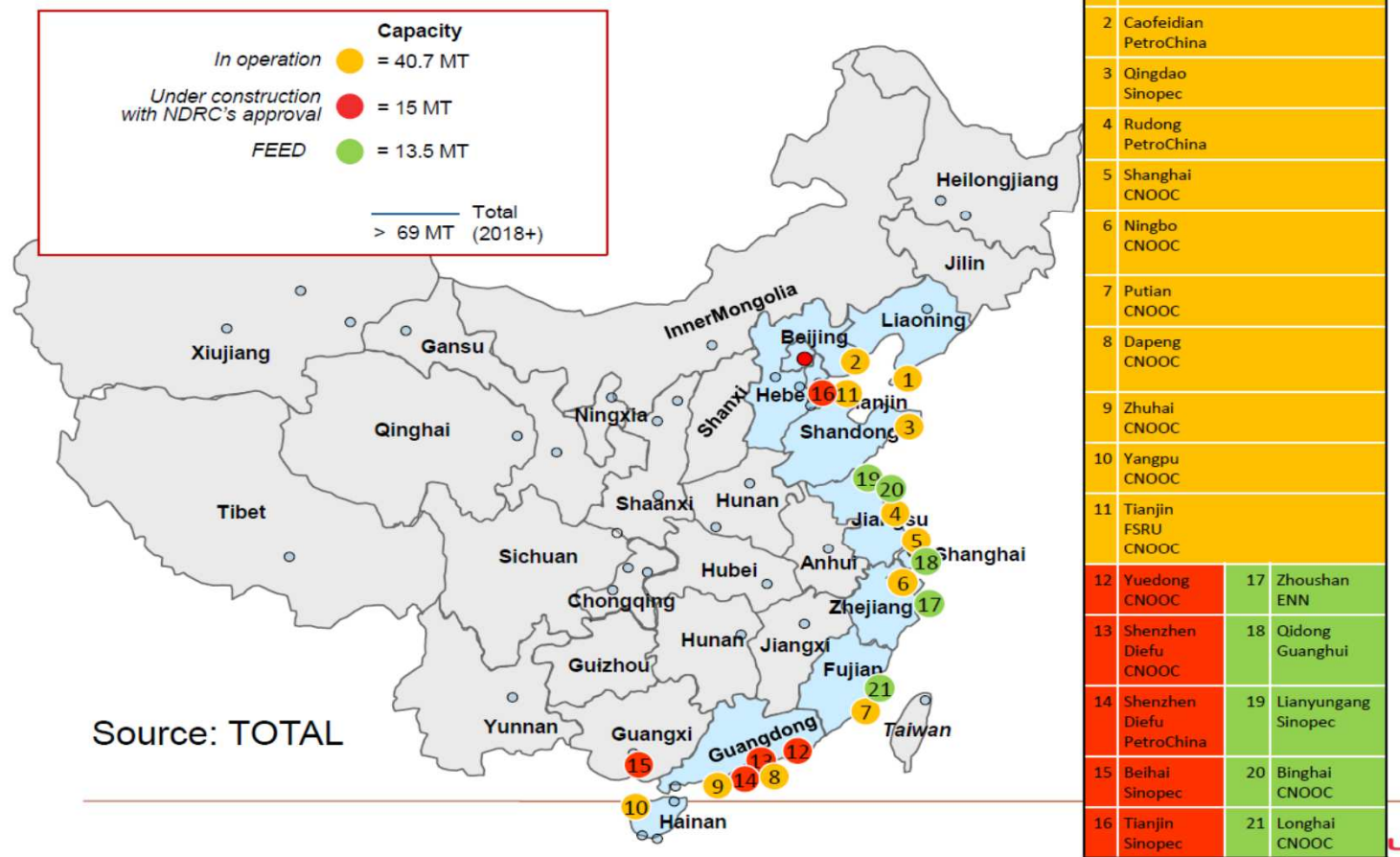


WEP Development Status

	Supply Sources	Supply capacity (bcm/y)	Development Stage
WEP I	Domestic gas	17	Completed
WEP II	Central Asian gas	30	Completed
WEP III	Central Asian gas	30	Completed in 2016-17
WEP IV	Domestic gas	25	Not yet
WEP V	Central Asian gas	25-30 or 45	Not yet
WEP VI	Altai gas	30	Not yet

Source : Keun-Wook Paik, Sino-Russian Oil and Gas Cooperation, OIES Paper WPM 59 (April 2015).

China: LNG receiving Terminal Projects



Source: Guy Broggi, 'What's next for Asian LNG?', presented at IP Week 2015 Conference, London, 11 February 2015.

China's LNG Terminal Expansion : as of 2015

Unit : no. of terminals / volume

	Operation	Under construction	Planned	Total
CNOOC	8 / 26.5 mt	6 / 13.5 mt	12 / 33.6 mt	26 / 73.6 mt
CNPC	4 / 10.6 mt	1 / 3.0 mt	5 / 15.5 mt	10 / 29.1 mt
SINOPEC	1 / 3.0 mt	3 / 9.1 mt	6 / 17.9 mt	10 / 30.0 mt
Total	13 / 40.1 mt	10 / 25.6 mt	23 / 67.0 mt	46/132.7 mt

Source : author's data base

Terminal Locations

CNOOC : Hainan, Fangchenggang, Yue Xi, Zhuhai, Dapeng, Diefu, Yuedong, Zhangzhou, Putian, Ningbo, Yangshan, Yancheng, Yantai, Tianjin, Yingkou.

CNPC : Dalian, Tangshan, Fuqing, Diefu North, Shennan

SINOPEC : Tianjin, Qingdao, Lianyungang, Beihei





Russian gas supply to the Unified Korea



Reference :

- **Keun-Wook Paik, Sino-Russian Oil and Gas Cooperation : The Reality and Implications (Oxford : Oxford University Press, 2012).**
- **“Sino-Russian Gas and Oil Cooperation Up : Entering into a new era of strategic partnership?”, OIES Paper WPM 59, April 2015.**
<http://www.oxfordenergy.org/wpcms/wp-content/uploads/2015/04/WPM-59.pdf>