

National Demand and Supply Scenarios for Natural Gas in South Africa

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South African Markets for Natural Gas

- Gas-to-Power
 - Eskom OCGT (Ankerlig & Gourikwa)
 - DoE IPP Peakers (Avon & Dedisa)
 - Newcastle IPP
 - Own Generation (Sasol & other IEU's)
 - Greenfield IPP/Eskom (Integrated Resource Plans)
- Gas-to-Liquids
 - PetroSA GTL (Mossel Bay)
 - Sasol Synthetic Fuels (Secunda)
- Chemicals Feedstock
 - Sasol Chemical Industries (Sasolburg)
- Industrial Applications
 - Heat & Steam
- Commercial & Domestic Applications
 - Spatial Heating & Cooling
 - Cooking
- Transportation
 - CNG (commercial fleets, public passenger transport & private vehicles)
 - LNG (marine, locomotives, commercial fleets, public passenger transport & private vehicles)

IRP2010 CCGT Scenarios : Policy Adjustment Impact

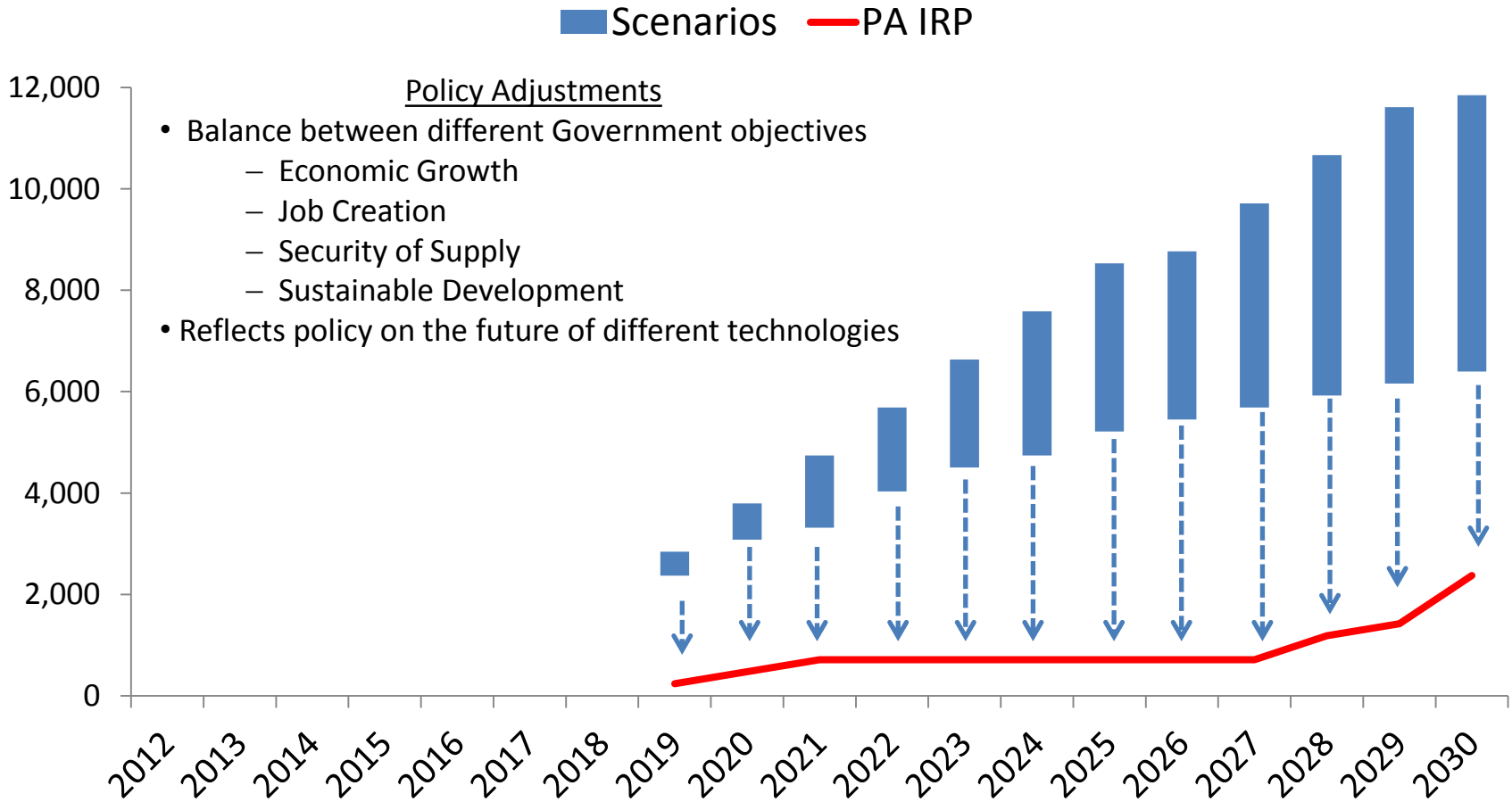


Table 3. Policy-Adjusted IRP

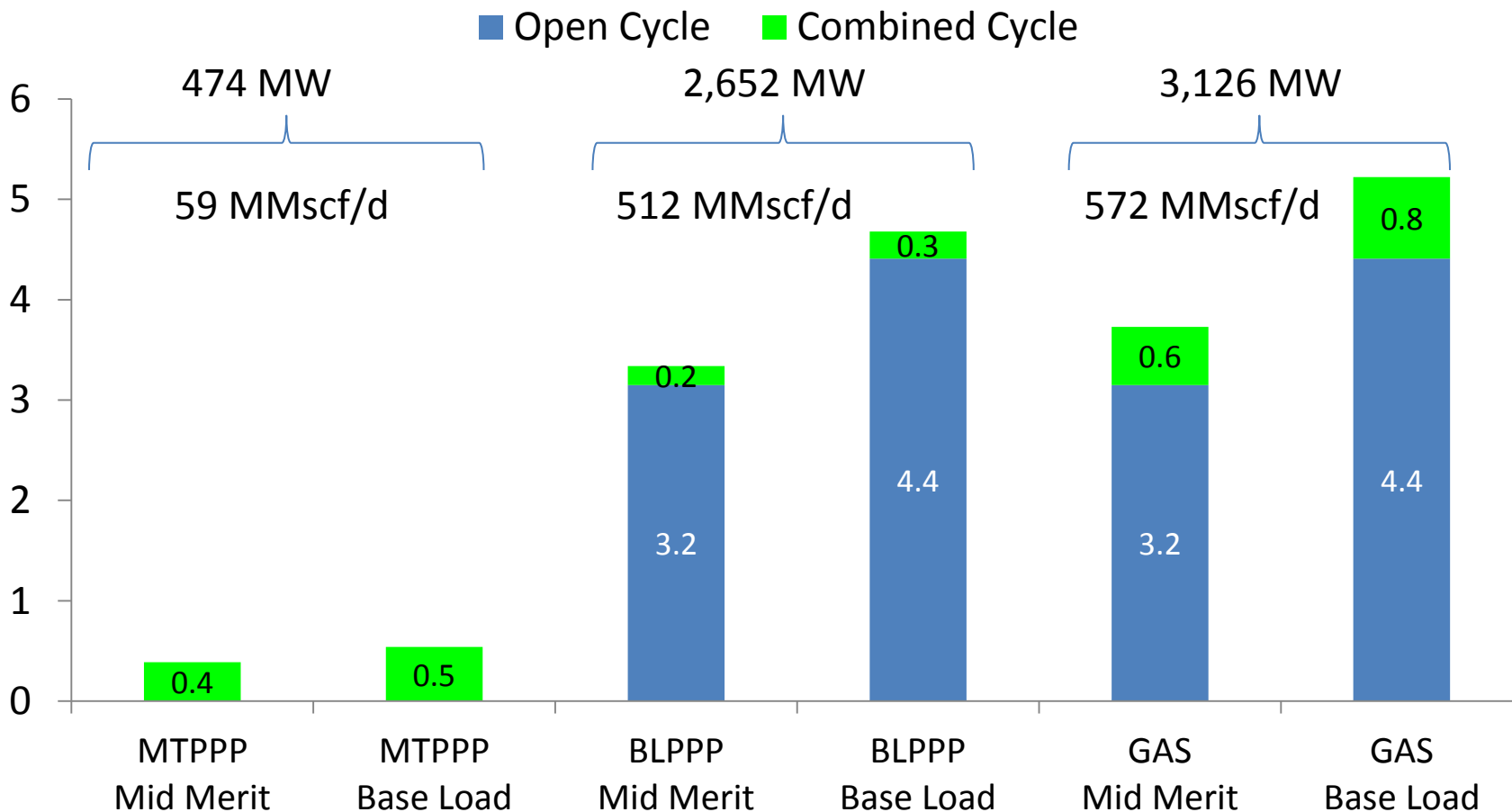
2,500 MW Coal
2,652 MW Natural Gas
2,609 MW Hydro

474 MW MTPPP

	Committed build											New build options								Total new build	Total system capacity	Peak demand (net sent-out) forecast	Demand Side Management		
	RTS Capacity (coal)	Medupi (coal)	Kusile (coal)	In gula (pumped storage)	DOE OCGT IPP (diesel)	Co-generation, own build	Wind	CSP	Land fill, hydro	Sere (wind)	Decommissioning	Coal (PF, FBC, Imports)	Gas CCGT (natural gas)	OCGT (diesel)	Import Hydro	Wind	Solar PV	CSP	Nuclear						
	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW	MW
2010	380	0	0	0	0	260	0	0	0	0	0	0	0	0	0	0	0	0	0	640	44535	38885	252		
2011	679	0	0	0	0	130	0	0	0	0	0	0	0	0	0	0	0	0	0	809	45344	39956	494		
2012	303	0	0	0	0	0	300	0	100	100	0	0	0	0	0	300	0	0	0	1103	46447	40995	809		
2013	101	722	0	333	1020	0	400	0	25	0	0	0	0	0	0	300	0	0	0	2901	49348	42416	1310		
2014	0	722	0	999	0	0	0	100	0	0	0	500	0	0	0	400	300	0	0	3021	52369	43436	1966		
2015	0	1444	0	0	0	0	0	100	0	0	-180	500	0	0	0	400	300	0	0	2564	54933	44865	2594		
2016	0	722	0	0	0	0	0	0	0	0	-90	0	0	0	0	400	300	100	0	1432	56365	45786	3007		
2017	0	722	1446	0	0	0	0	0	0	0	0	0	0	0	0	400	300	100	0	2968	59333	47870	3420		
2018	0	0	723	0	0	0	0	0	0	0	0	0	0	0	0	400	300	100	0	1523	60856	49516	3420		
2019	0	0	1446	0	0	0	0	0	0	0	0	250	237	0	0	400	300	100	0	2496	63352	51233	3420		
2020	0	0	723	0	0	0	0	0	0	0	0	250	237	0	0	400	300	100	0	2010	65362	52719	3420		
2021	0	0	0	0	0	0	0	0	0	0	-75	250	237	0	0	400	300	100	0	1212	66574	54326	3420		
2022	0	0	0	0	0	0	0	0	0	0	-1870	250	0	805	1143	400	300	100	0	1365	67939	55734	3420		
2023	0	0	0	0	0	0	0	0	0	0	-2280	250	0	805	1183	400	300	100	1600	2358	70297	57097	3420		
2024	0	0	0	0	0	0	0	0	0	0	-909	250	0	0	283	800	300	100	1600	2424	72721	58340	3420		
2025	0	0	0	0	0	0	0	0	0	0	-1520	250	0	805	0	1600	1000	100	1600	3835	76556	60150	3420		
2026	0	0	0	0	0	0	0	0	0	0	0	1000	0	0	0	400	500	0	1600	3500	80056	61770	3420		
2027	0	0	0	0	0	0	0	0	0	0	0	250	0	0	0	1600	500	0	0	2350	82406	63404	3420		
2028	0	0	0	0	0	0	0	0	0	0	-2850	1000	474	690	0	0	500	0	1600	1414	83820	64867	3420		
2029	0	0	0	0	0	0	0	0	0	0	-1128	250	237	805	0	0	1000	0	1600	2764	86584	66460	3420		
2030	0	0	0	0	0	0	0	0	0	0	0	1000	948	0	0	0	1000	0	0	2948	89532	67809	3420		
TOTAL	1463	4332	4338	1332	1020	390	700	200	125	100	-10902	6250	2370	3910	2609	8400	8400	1000	9600	45637					

S34 Determination

25 Year Gas Reserves - TCF



Mid Merit ~ 50% LF
 Base Load ~ 70% LF

IRP2010 Portfolio Impact

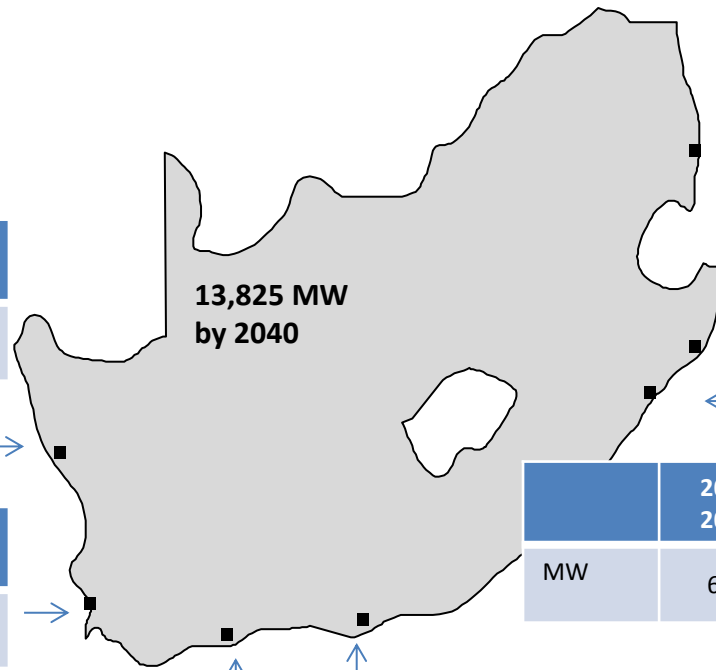
Re-alignment of CCGT and Nuclear Scenarios

	IRP2010	1	2	3	4	5	6
CCGT MW	2,370	3,970	5,570	7,170	8,770	10,370	11,970
New Nuclear MW	9,600	8,000	6,400	4,800	3,200	1,600	0
Total Nuclear MW	11,400	9,800	8,200	6,600	5,000	3,400	1,800
mtpa LNG	1.7	3.8	5.9	8.0	10.2	12.3	14.4
MMscf/d PNG	212	476	740	1,004	1,268	1,532	1,796
MGJ/a PE	86	193	300	408	515	622	729
TCF gas (25 years)	1.9	4.3	6.8	9.2	11.6	14.0	16.4
Delta Capex* USD bn	-	(4.5)	(9.0)	(13.5)	(18.0)	(22.5)	(27.0)
Delta CO ₂ MT p.a.	-	4.8	9.7	14.5	19.4	24.2	29.1

***Overnight Capex (i.e. excl. IDC and escalation)**

South African Gas-to-Power Vision (2012 – 2040)

	2012 2020	2021 2030	2031 2040	TOTAL
		400		400



	2012 2020	2021 2030	2031 2040	TOTAL
MW	400	400		800

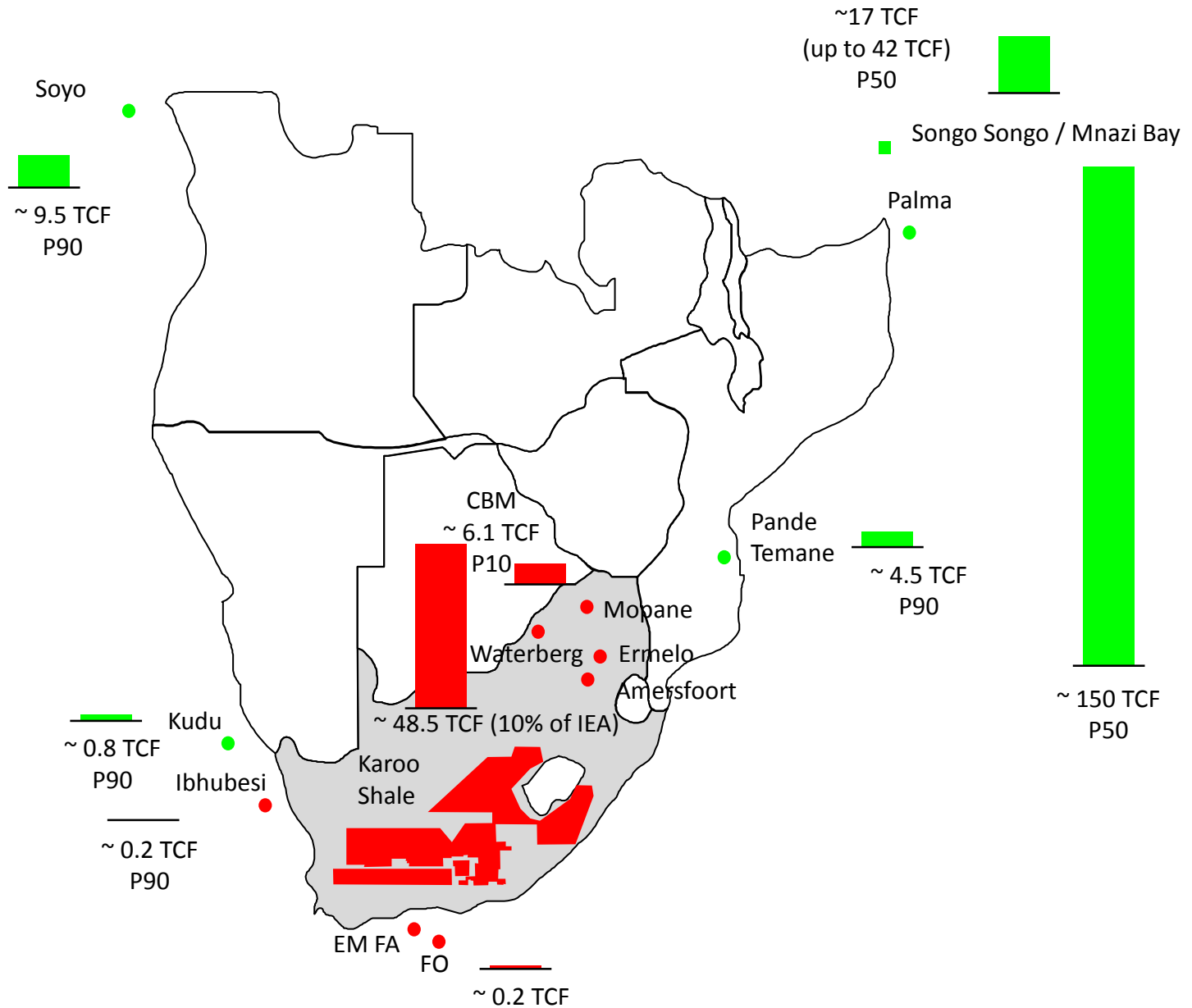
	2012 2020	2021 2030	2031 2040	TOTAL
MW	670	2,400	2,400	5,470

	2012 2020	2021 2030	2031 2040	TOTAL
MW	1,350	720		2,070

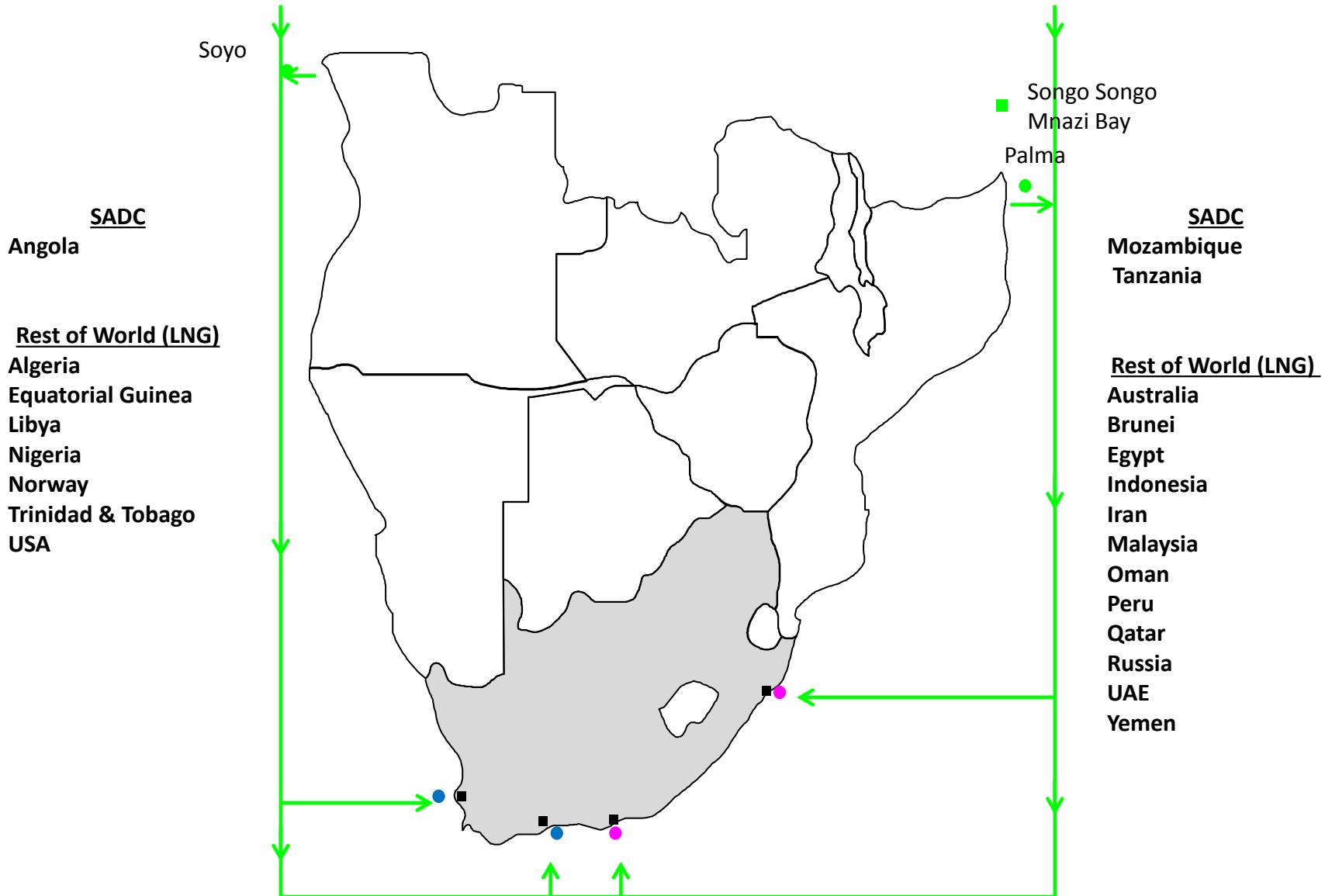
	2012 2020	2021 2030	2031 2040	TOTAL
MW	335	2,400	1,200	3,935

	2012 2020	2021 2030	2031 2040	TOTAL
MW	1,150			1,150

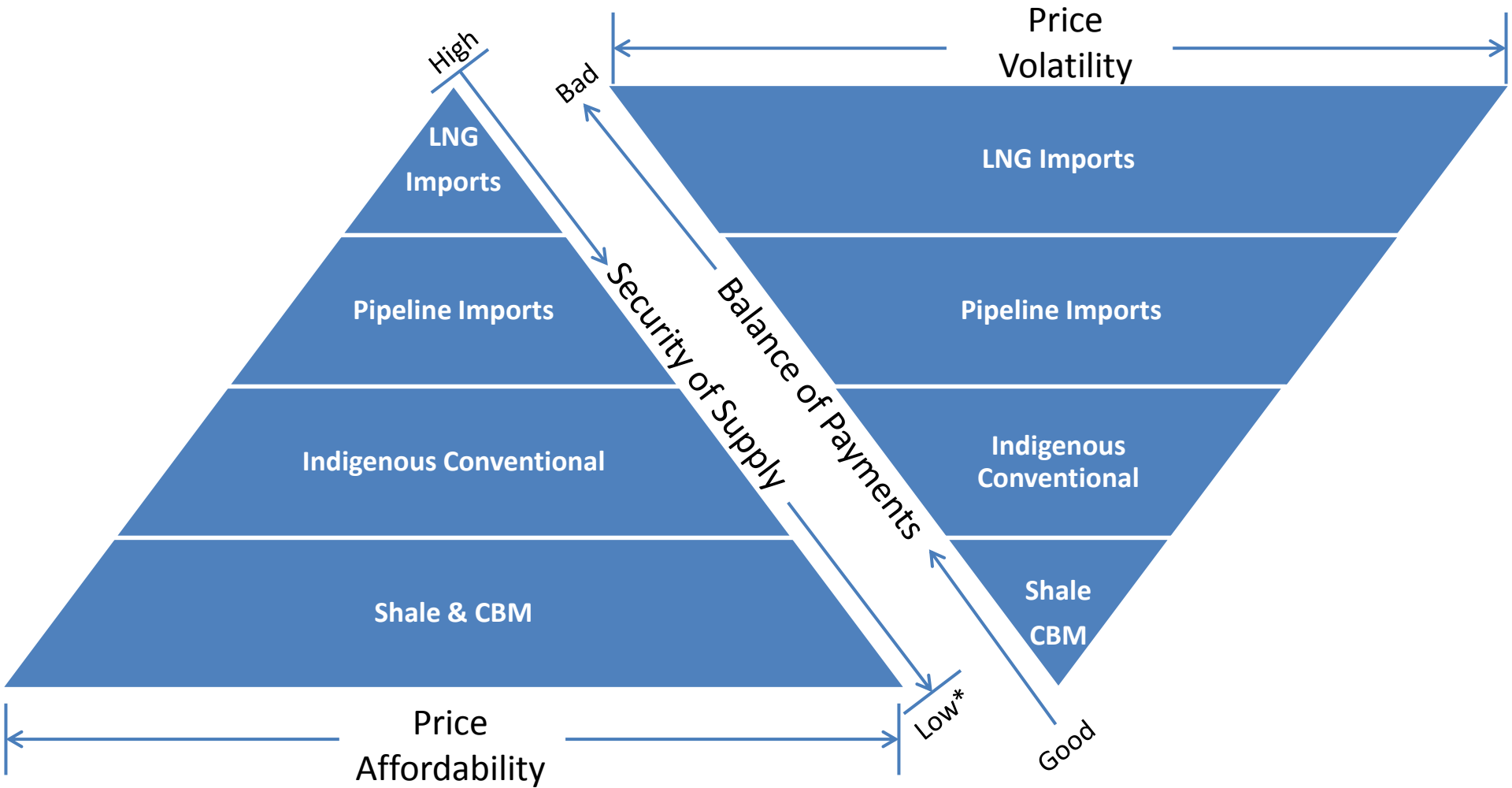
Southern Africa Gas Supply Potential



LNG Import Options

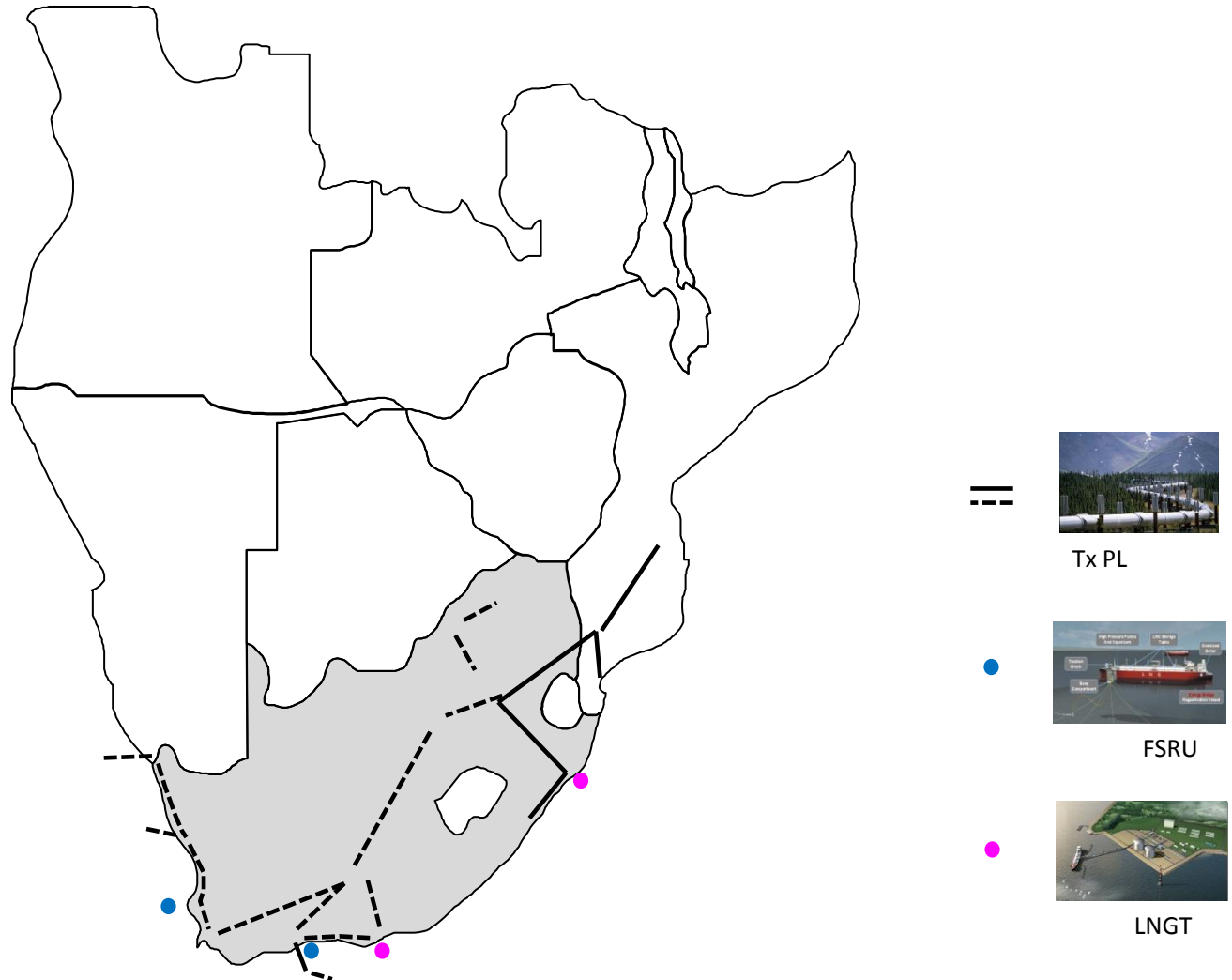


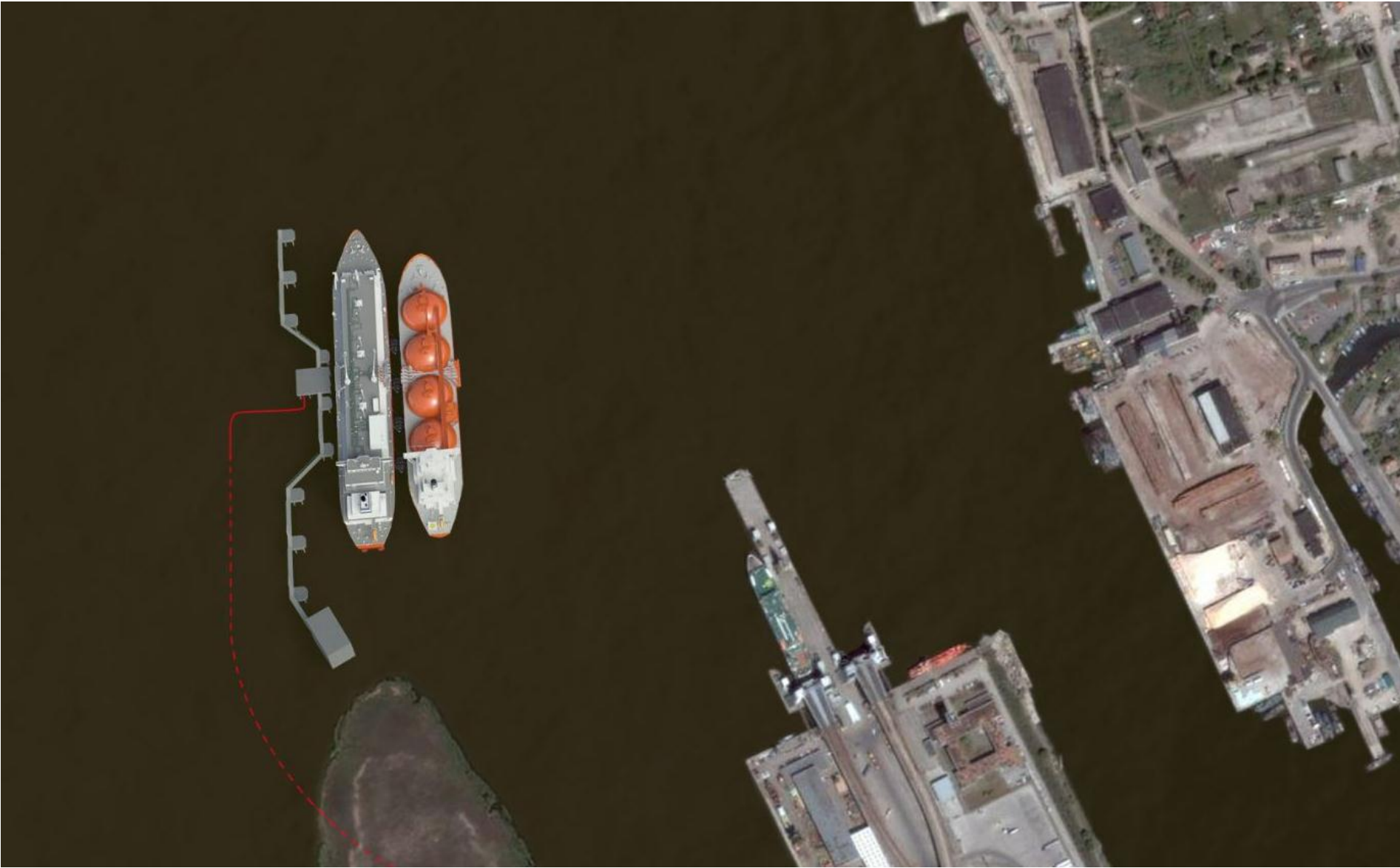
South African Gas Supply Portfolio Trade-offs



* Appraisal drilling will improve security of supply

South Africa Gas Infrastructure Vision (2012 – 2040)



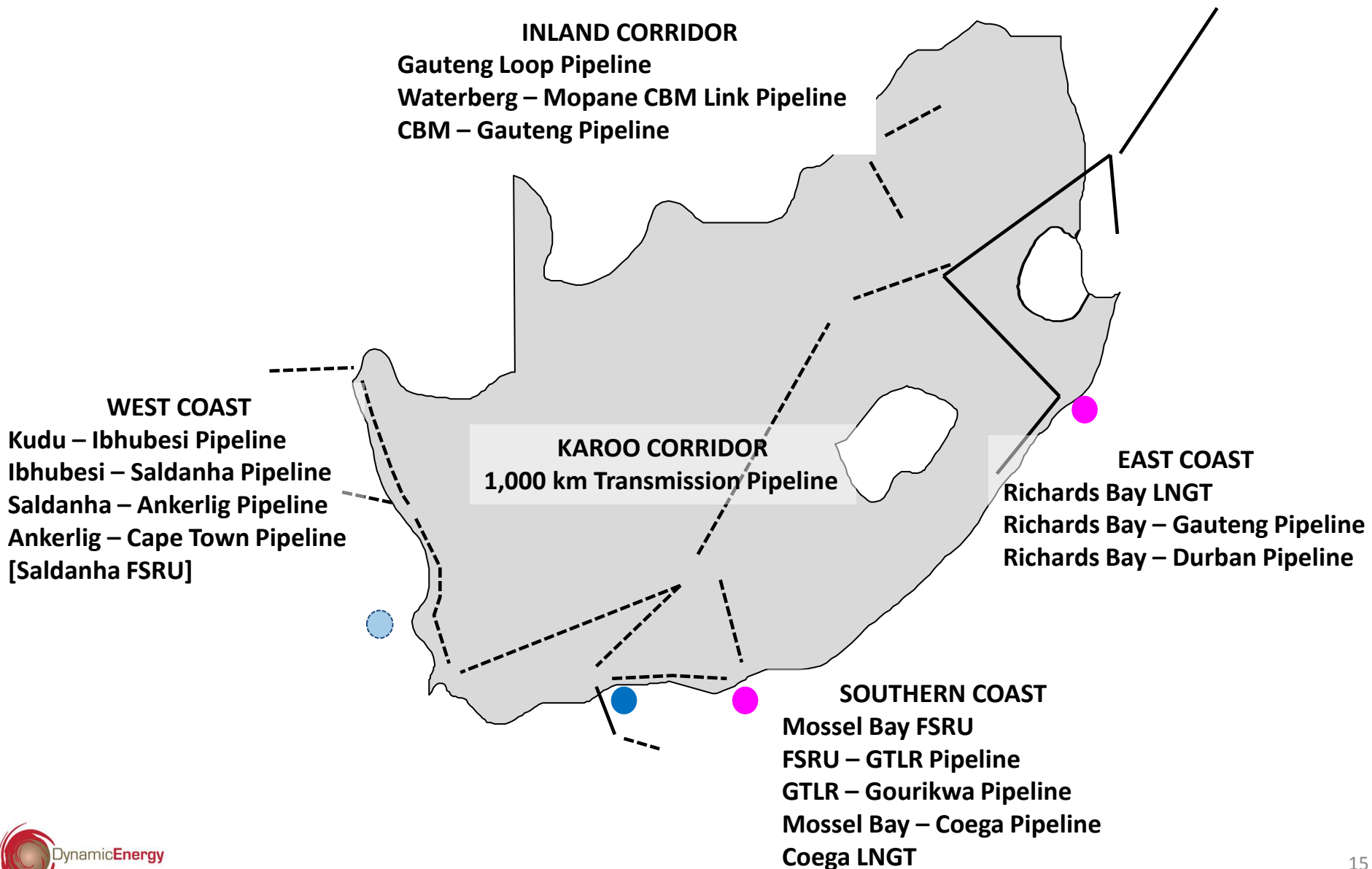




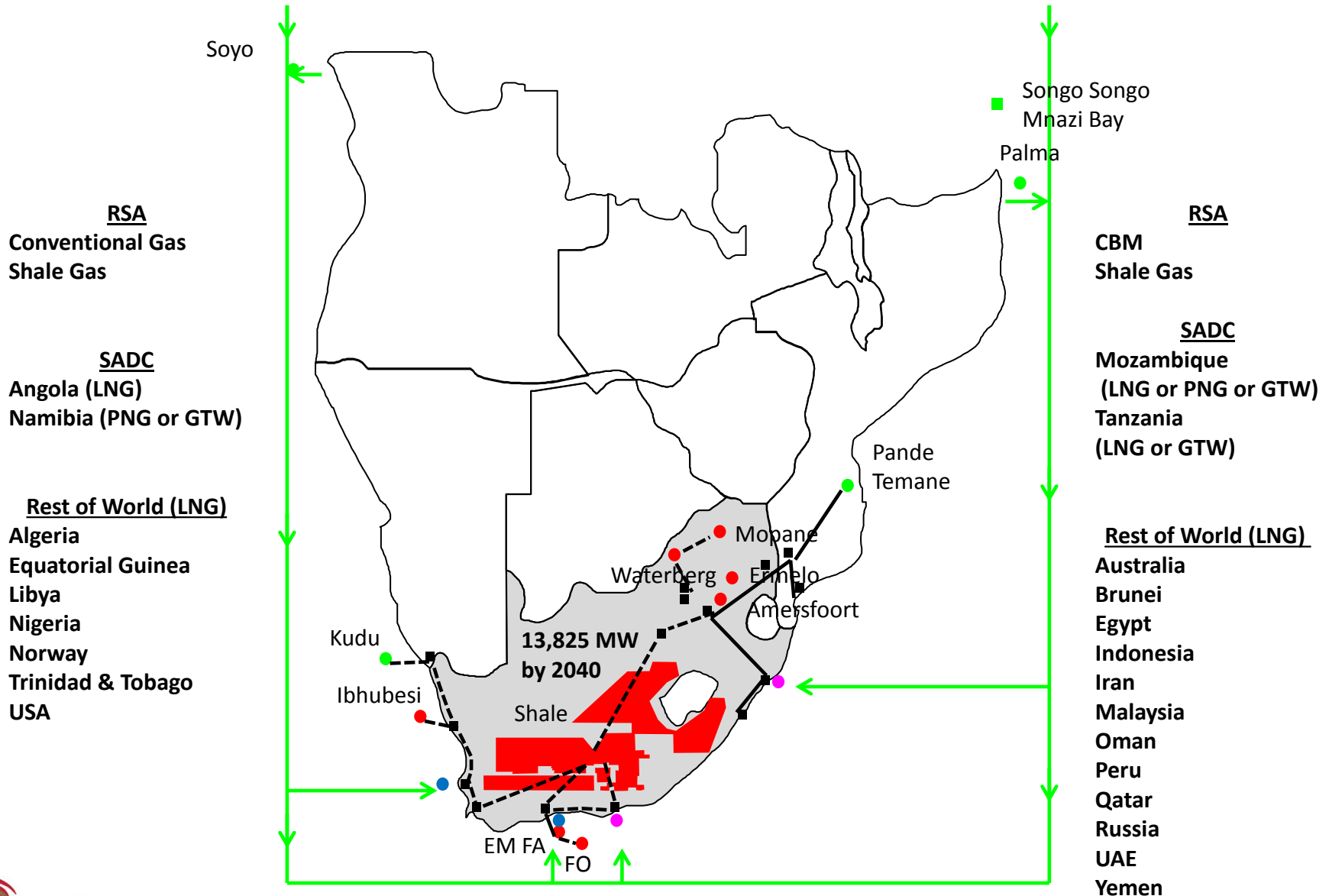
Ship-to-Ship (STS) LNG Transfer



South Africa Gas Infrastructure Vision (2012 – 2040)



Integrated Natural Gas Vision (2012 – 2040)



Thank You

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