



4TH ANNUAL SADC INDUSTRIALISATION WEEK

Mineral Beneficiation: Mining, Growth and Building Linkages for Sustainable Economic Development

07 August 2019



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Problem Statement and Rationale

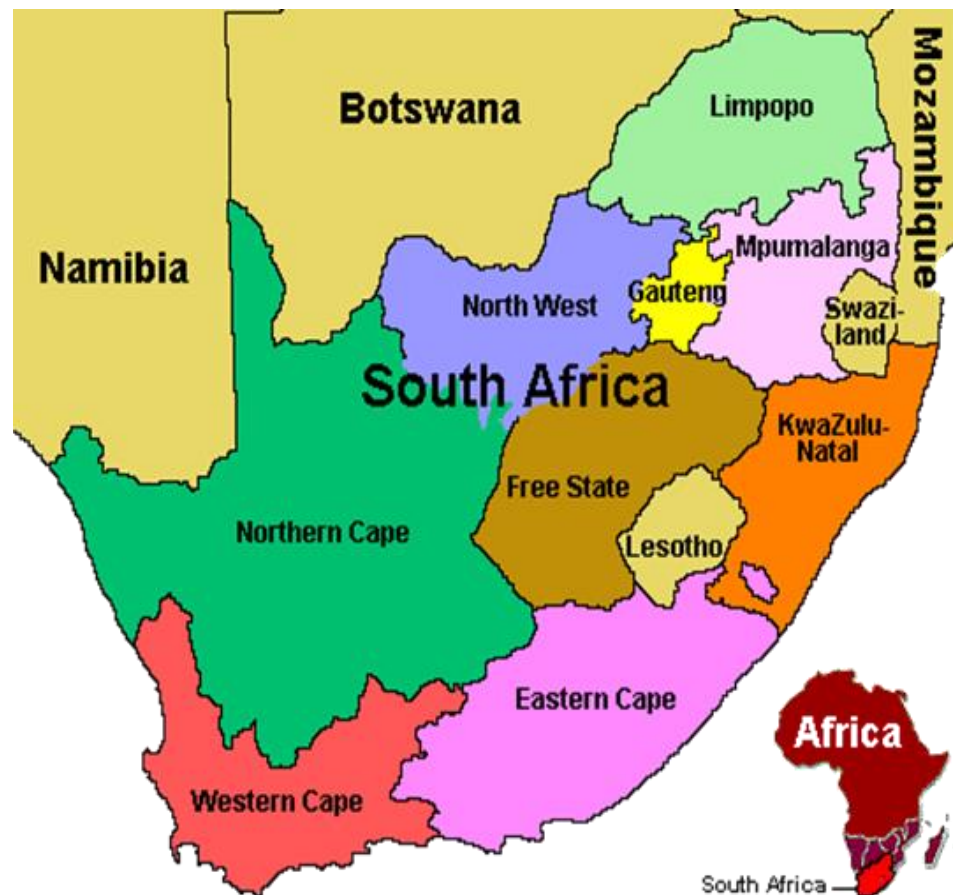
- The SADC region is richly endowed with diverse mineral resources. The minerals are produced by large-scale miners and artisanal miners.
- Artisanal miners use hand tools and dig underground in mines that extend for tens of metres under surface to extract the minerals. This result in environmental degradation, loss of life as they work under dangerous conditions.
- Another regional challenge is the export of raw minerals.
- Although efforts to promote export of value-added minerals are underway-there have not produced intended results slowing regional industrialisation.
- **To achieve meaningful industrialisation, member states must upgrade to higher value adding activities.**

SADC Regional Integration

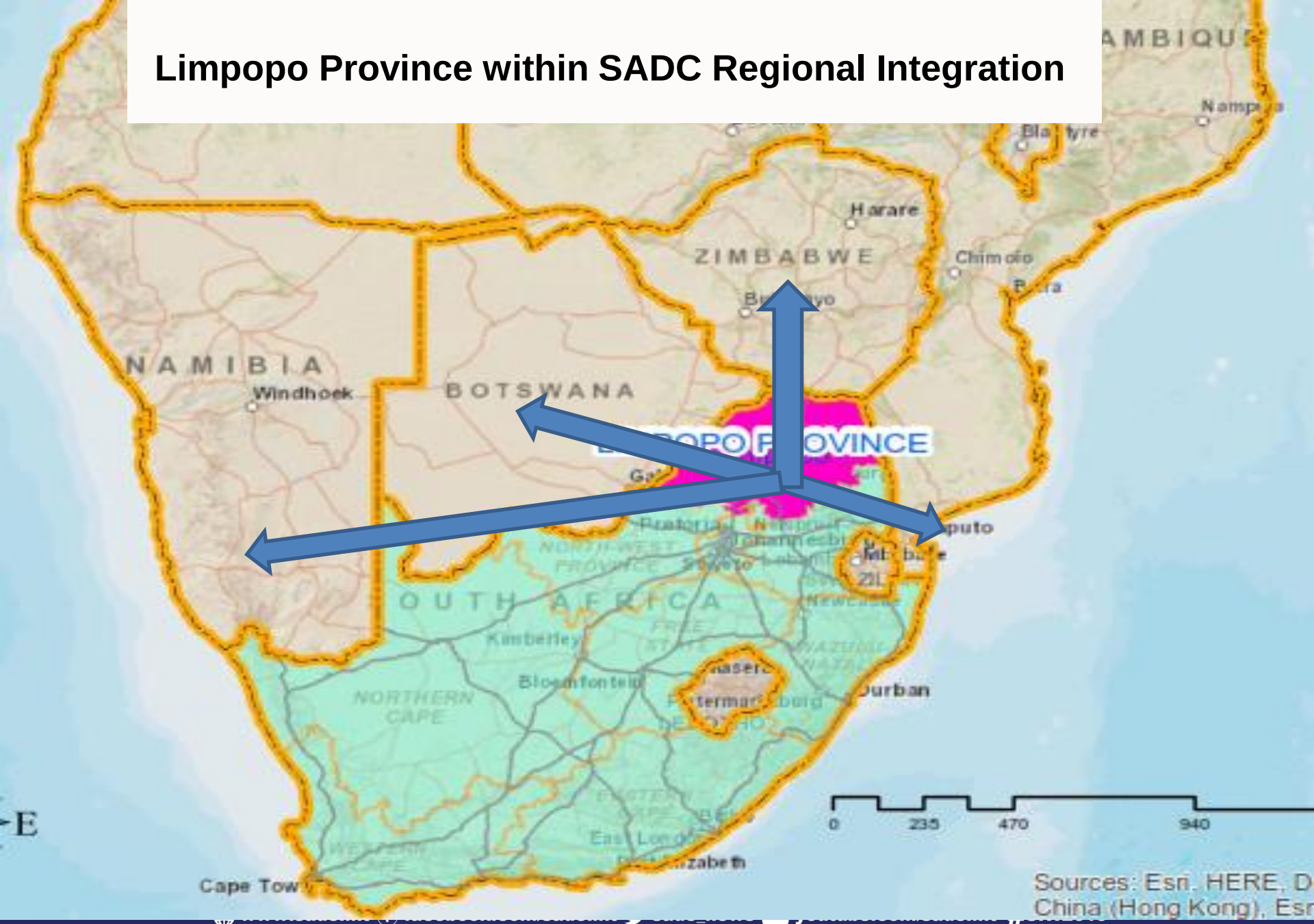
- Limpopo is the gateway that connects SADC countries to the rest of the world given that the larger proportion of exported and imported goods passes through Limpopo borders to & from the ports in South Africa
- Limpopo is inter-connected with SADC through mineral basins and trans-frontier parks
- Given the strategic location of Limpopo, it is ideal for investments (global & regional value chains) taking advantage of the SADC market for free (as a result of the SADC FTA)

Limpopo Province at a glance

- Borders: Mozambique (eastern), Zimbabwe (northern) and Botswana (western side)
- Easy access to other African markets: Sub-Saharan Africa & SADC in particular, with 344 million people
- Population: 5.7 million (10.2% of SA population)
- Share of national land area: 10.3%
- Contribution to national GDP: 7.2%
- Relatively advanced economic infrastructure
- In close proximity to Gauteng (SA's economic hub)



Limpopo Province within SADC Regional Integration



Sources: Esri, HERE, DeLorme, Mapbox, Aerial, China (Hong Kong), Esri



Limpopo Province: Mineral Occurrences & Resource

The Province is endowed with a variety of minerals needed for modern industrialisation . Limpopo has 147 mining projects that are operational and there are a further 8 projects that are in the pipeline worth R2.5 billion and will create 3000 jobs

1) Precious Minerals and Stones

- Diamonds: Venetia is currently the largest producer of diamonds in South Africa
- PGMs (Bushveld Complex)
- Gold
- Silver

2) Energy Resources

- Coal: Six of the 13 coalfields of South Africa occur in Limpopo (Estimated at 76% of SA coal resource in Limpopo)
- Gas

3) Base Metals & Non-Ferrous Metals

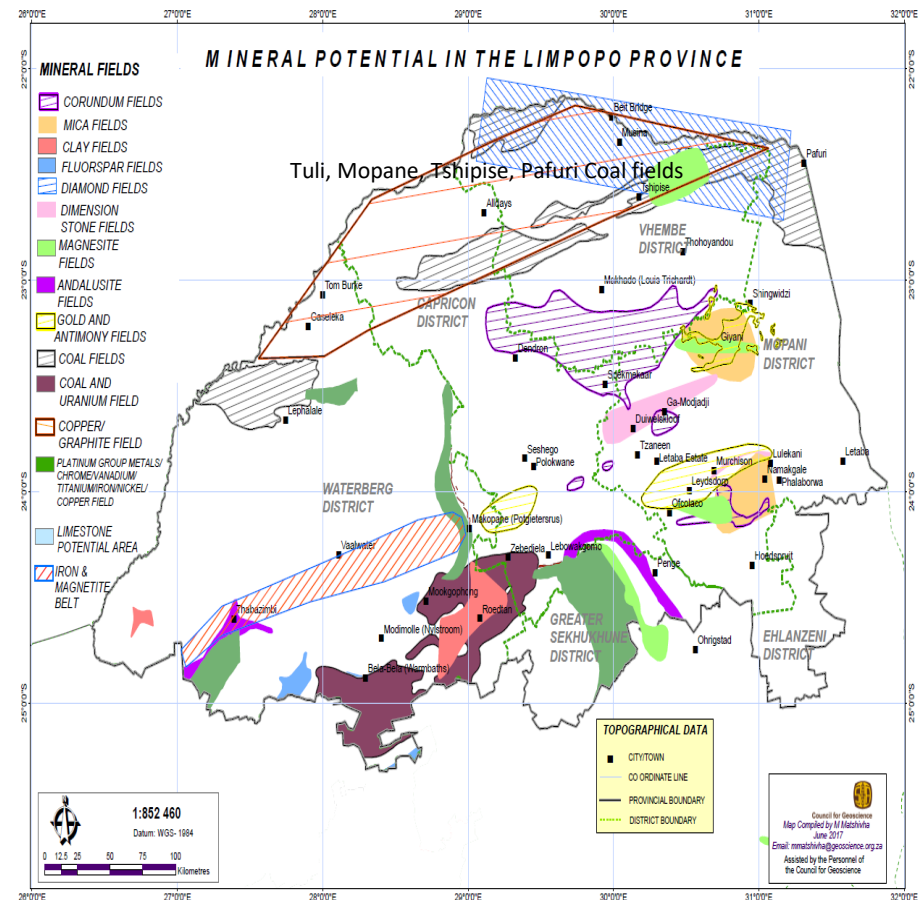
Copper, Antimony

4) Ferrous Metals

Iron ore, Vanadium, Chromium, *Titanium*, Silica

5) Industrial Minerals

Dimension Stones, Fluorspar, limestone/Dolomite, Magnesite, Phosphate, graphite etc

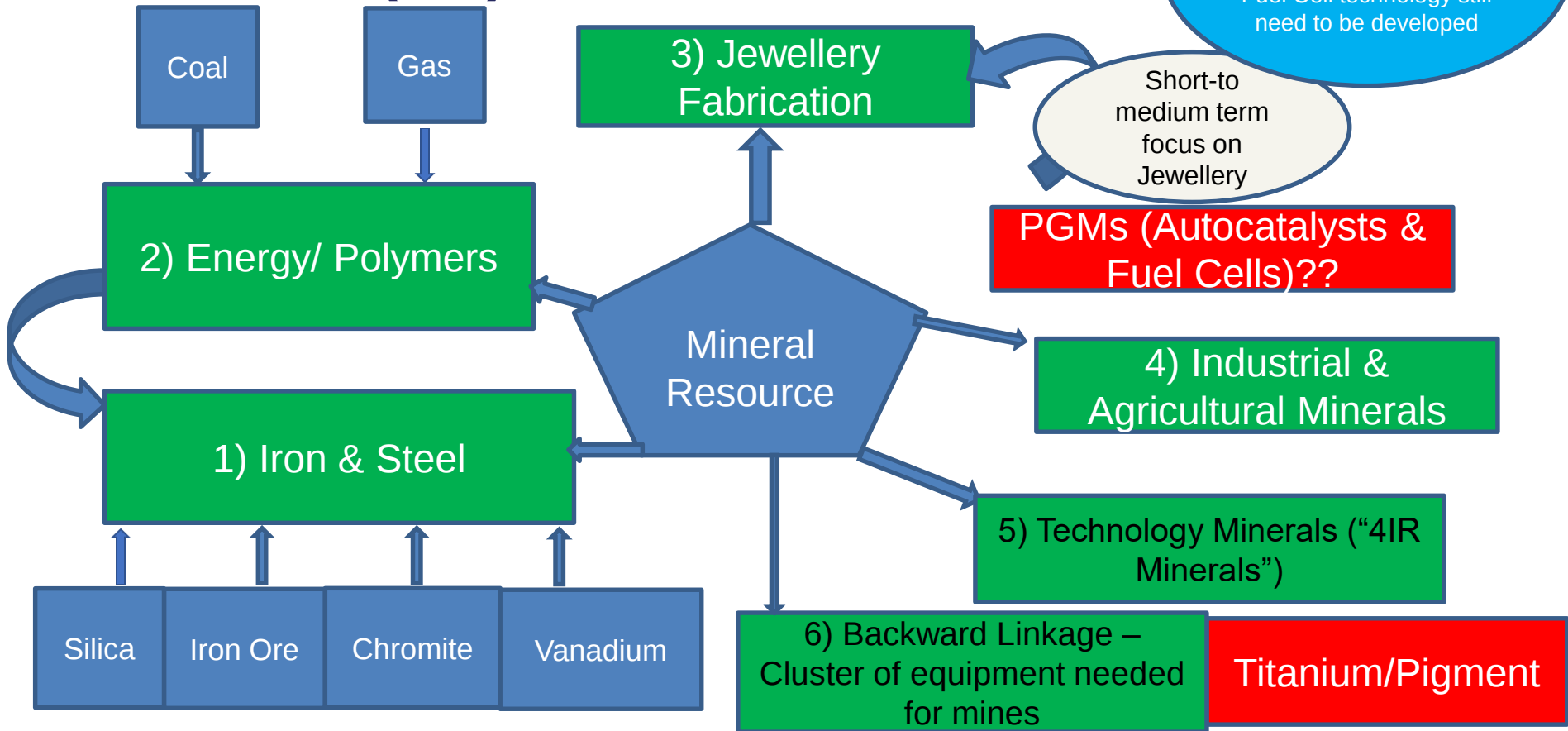


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Province	Primary Mineral Sales R'000	Total Sales Selected Processed Minerals R'000
Mpumalanga	138 423 030	31 632 683
North West	80 882 969	19 403 891
Limpopo	77 083 248	325 007-Limpopo sales of processed minerals is 0.4% of sales of raw minerals
Gauteng	47 700 334	2 256 265
KZN	10 648 725	25 966 765
Western Cape	6 894 439	1 890 316



Possible Value Chains for Limpopo Province (Six)



Mineral Beneficiation in Limpopo

- In South Africa, mineral beneficiation is guided by the Mineral and Petroleum Development Act of 2002.
- Mineral beneficiation in Limpopo is being undertaken through two special economic zones (SEZs), namely, Musina-Makhado and Tubatse.
- Musina-Makhado SEZ, is a metallurgical processing zone with an investment pipeline of R150 billion and will create a minimum of 20700 jobs.
- Tubatse Special Economic Zone is the is centred around the beneficiation of platinum group metals, has an investment pipeline of R25 billion and will create in excess of 8 000.

Musina-Makhado Project Information

Project Name	Project Data			
	Project land use (hectares)	Water consumption (mM3)	Project workers	Production (Tons per annual)
Power Plant	300	9	800	3500MW
Coking Plant	500	2.5	1 200	3m
Ferrochrome Plant	500	6	2 600	1m
Ferromanganese Plant	500	6	2 300	1m
Ferrosilicon Plant	300	4	1 800	500 000
Pig Iron Plant	600	4	3 000	2m
Steel Plant	600	3	2 600	3m
Stainless Steel Plant	500	2	2 000	3m
Lime Plant	500	3	1 500	1m
Supporting Facilities	2 000	5	3 000	-
Total Project Investment	6 300	44.5	20 800	-

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Tubatse Special Economic Zone Project Information

SECTOR	PRODUCTS	ESTIMATED INVESTMENT R	ESTIMATED JOBS TO BE CREATED
Green energy	Torrefication (green economy)	R300 million	300 jobs
Manufacturing	PV Modules Manufacturing Plant	R100 million	TBC
Assembling	Hydrogen fuel cell Dozer	R200 million	200 jobs
Manufacturing	Off-Road Tyres	R8 million	TBC
Energy & manufacturing	Solar panels / energy	R2,2 billion	300
Chemical	Ethanol and sugar	R955 million	1094
Manufacturing and assembly	Mining machinery	R450 million	250
Manufacturing (processing of sulphate to fertiliser)	Manufacturing of petroleum products	R380 million	3000 jobs
Manufacturing (processing of sulphate to fertiliser)	Fertiliser	R8 billion	800 jobs
Manufacturing	Roof bolts	R80 million	450 jobs
Manufacturing	Pipes	R121 million	100 jobs



Tubatse Special Economic Zone Project Information-contn'd

SECTOR	PRODUCTS	ESTIMATED INVESTMENT R	ESTIMATED JOBS TO BE CREATED
Manufacturing	Roof support systems & safety structures	R100 million	150
Beneficiation	Platinum Refinery	R17 billion	TBC
Manufacturing	Pre-cast top structures and bottom structures	R45 million	95
TOTAL		R25, 032 billion	+/- 8 000 jobs

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