



وزارة الاستثمار
Ministry of Investment

Waste Investment Opportunities

Investor promotion pack –
Precious metal recovery facility

Riyadh, Oct 2022

Precious metal recovery facility – Overview & value proposition

Opportunity overview

Establish a **750 tpa precious metals recovery (PMR) facility** in West provinces to process PCBs¹⁾ and CPUs¹⁾ from e-waste using hydrometallurgical technology

KSA envisioned value chain



KSA value proposition

1

Large feedstock market

- With a population of around 35 million and a high standard of living, the Kingdom now generates over 600 k tons of WEEE per year, equaling nearly 7 k tons of PCBs and CPUs

2

Government commitment to unlock the sector

- Testimony to the government's strong commitment to unlock the sector, the National Center for WM and the Saudi Investment Recycling Company have been established with mandate to support the transformation of the Kingdom's industry

3

Strong market growth

- Generation of WEEE and, subsequently, PCBs and CPUs in the Kingdom is projected increase by 5% annually, doubling current volumes by 2035

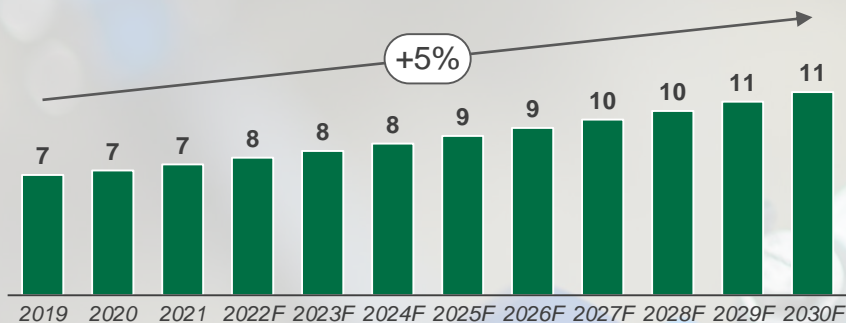
4

Limited treatment options

- Processing of PCBs is not available regionally as materials are exported to large smelters in Europe – Establishment of first PMR facility can initiate development of a new sector

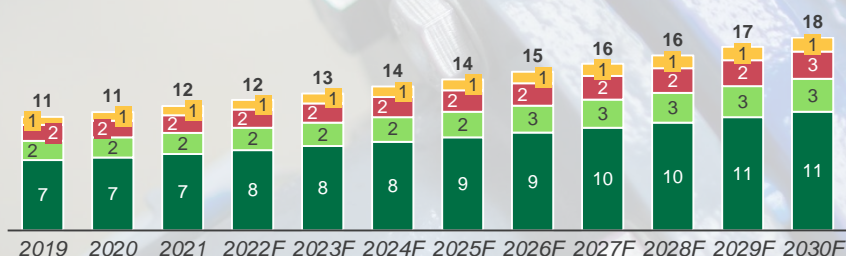
Precious metal recovery facility – Market outlook

PCBs generated in KSA
2019-2030 [k tons]



PCBs generation in GCC, breakdown per country
2019-2030 [k ton]

KSA generating ~61% of total PCBs and CPUs in GCC



Local market drivers

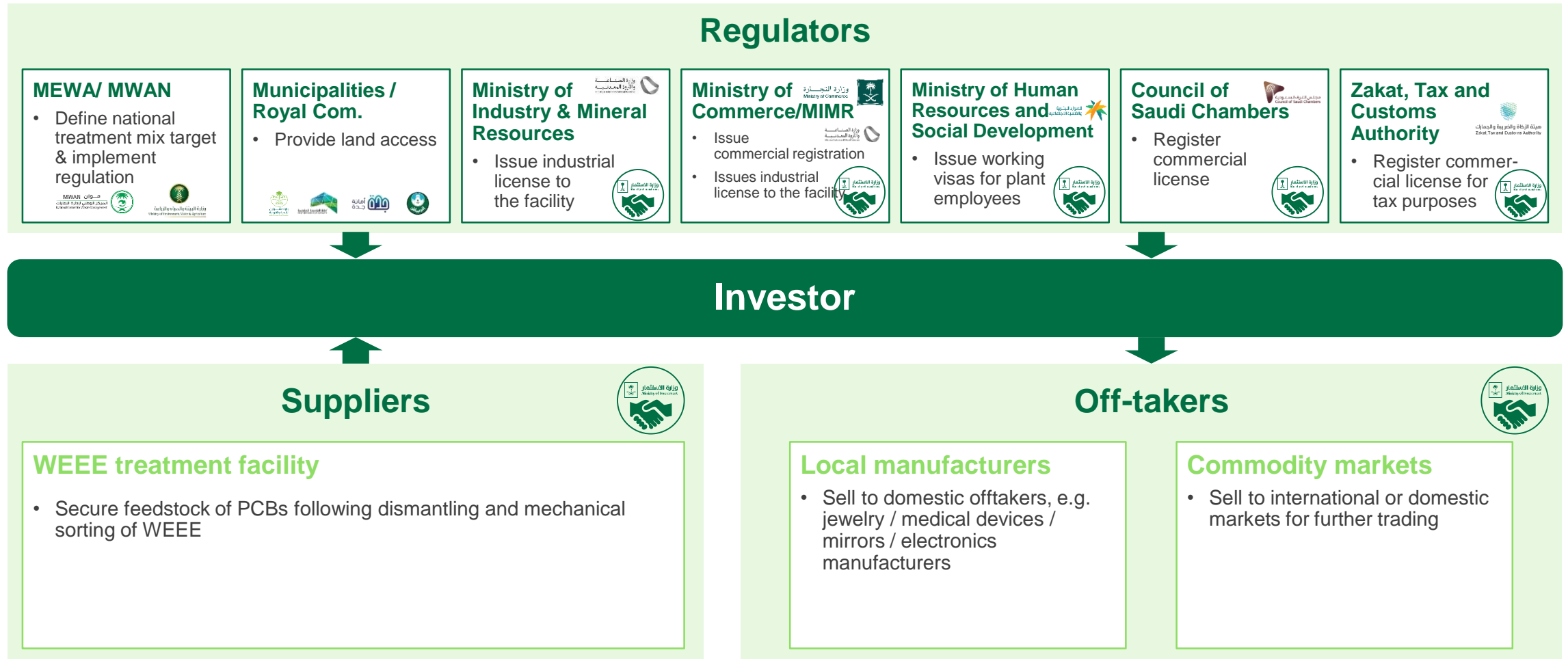
- 1 Growing population**
Population of c.35 m with highest growth rate (2.5% p.a.) among G20
- 2 Rapid urbanization**
One of the highest global urbanization indices (84% compared to 57% global average)
- 3 Growing standard of living**
One of the highest GDP/ Capita at USD c.24 k growing at a rate of ~2%
- 4 Penetration of electronics**
Rising incomes lead to increased use and faster turnover of electrical and electronic equipment
- 5 Stricter environmental targets**
Hazardous waste, contained in WEEE, is one of focus areas of new waste management regulations

Global market trends

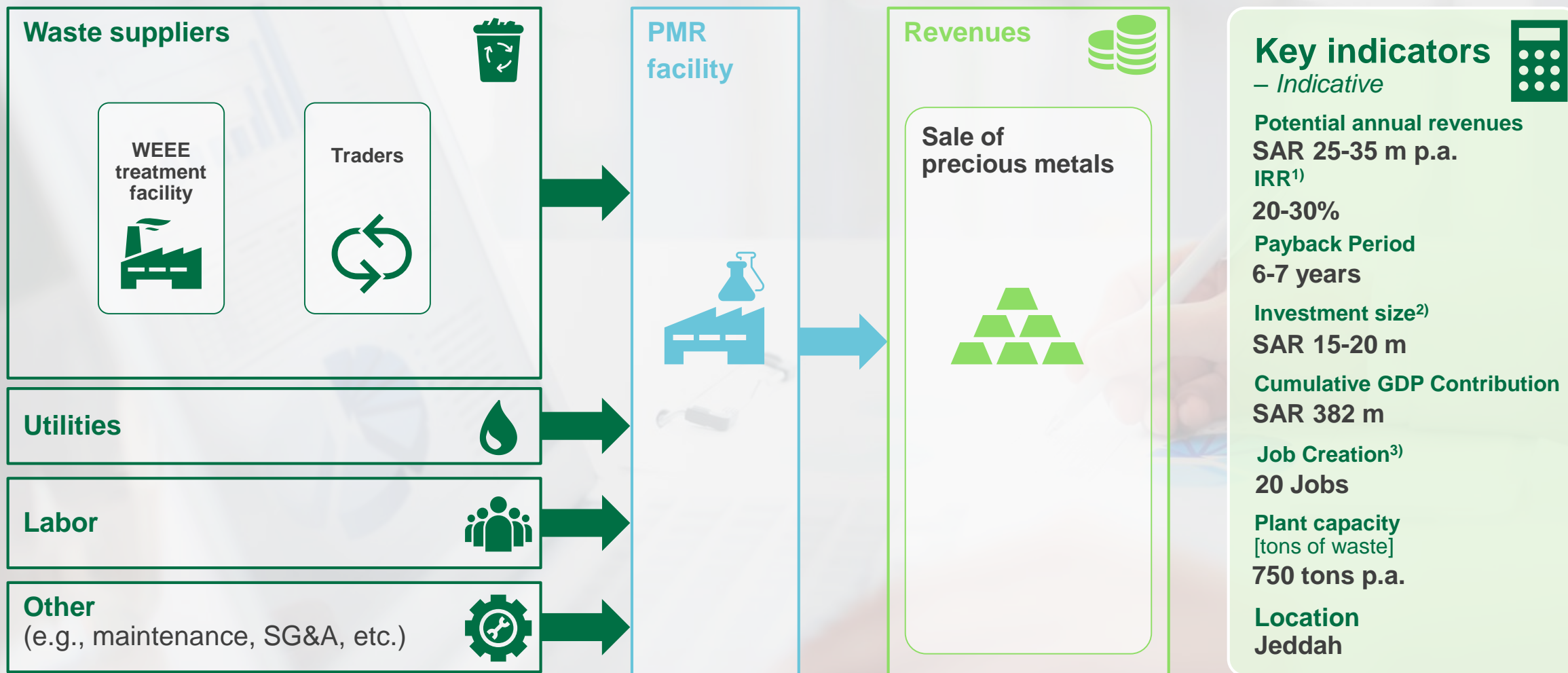
- 1 Unexploited economic value**
Globally, nearly USD 10 bn worth of precious metals is disposed annually due to lack of proper treatment
- 2 Technology advancements**
Along traditional pyrometallurgy, hydrometallurgy is increasingly used to recover precious metals in lower volumes
- 3 Role of informal sector**
Lacking environmentally-friendly options, recovery of precious metals from PCBs by informal sector has adverse environmental effects
- 4 Material efficiency**
Urban mining of gold from PCBs is only more efficient but also up to 10% cheaper compared to gold ore mining

Precious metal recovery facility – Stakeholder ecosystem

Illustrative logos – non-exhaustive



Precious metal recovery facility – Business model & financials



Precious metal recovery facility – Enablers & incentives

Existing enablers & incentives

Financial	Facility¹⁾ 	<ul style="list-style-type: none"> • Competitive land costs relative to other countries (USD 0.3 per sqm) • Provision of soft loans through SIDF – up to 75% of project financing 	
	Utilities 	<ul style="list-style-type: none"> • Low power and water costs set for industrial cities – Lowest in the region 	
	Equipment 	<ul style="list-style-type: none"> • Customs duty exemption for machines used in production process and for spare parts not available locally 	
	Labor 	<ul style="list-style-type: none"> • Nationalization incentives set; HRDF covers a share of the salary • Facilitative procedures³⁾ for foreigners with specialized skills 	
Non-financial	Foreign businesses 	<ul style="list-style-type: none"> • Allows foreign entities and individuals to have 100% ownership of properties in the kingdom such as plants/ facilities, businesses, etc. 	
	Feedstock and Offtake 	<ul style="list-style-type: none"> • Development of appropriate technical and marketing studies to increase exposure to potential feedstock providers and off-takers 	

Additional MISA support

- 
Facilitate the registration process of companies in KSA
- 
Establish connection with local market players
- 
Introduce investor to relevant public stakeholders


Additional enablers and incentives can be discussed with MISA on case-by-case basis

Precious metal recovery facility – Cost of Doing Business



- 1 Electricity tariffs for industrial players**
 - USD 48/MWh
- 2 Productivity adjusted wages**
 - USD 3.3/hour
- 3 Logistics Performance Index (1-5)**
 - 3.2
- 4 Construction Costs (Indexed to US, % 0 is cheapest)**
 - 74
- 5 Ease of getting credit (0-100)**
 - 50

Precious metal recovery facility – Next steps

Phase 1: Initiation

- Submit expression of interest concerning the opportunity to MISA.
- Discuss with MISA the opportunity and organize site visit
- Communicate with involved entities (off-takers, feedstock providers, partners, etc.)
- Conduct pre-feasibility study and due-diligence before final investment decision
- Secure enablers and incentives
- Secure MISA investment license



Phase 2: Set up license requirements

- Secure commercial registration from Ministry of Commerce
- Secure working visas and labor working files from Ministry of Human Resources and Social Development & Ministry of Internal Affairs
 - Register at the Council of Saudi Chambers
 - Register at Saudi Banks
 - Register at Zakat, Tax, and Customs Authority.
 - Secure waste management license from MWAN.

Execution steps

Phase 4: Launch production

- Launch RPM facility operations and start processing waste
- Initiate sale of recovered precious metals
- Adjust to market demand and ramp-up generation output



Phase 3: Construct facility

- Launch and complete PMR facility engineering procurement and construction phase

Recommended project type

Private investment

JV w/ local company

PPP

Start your journey with MISA



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