

Changing Challenges for Large Open Pit Mines – Keynote –

Dipl.-Ing. Arie-Johann Heiertz

Head of Mining and Materials Handling

RWE Technology International GmbH

Agenda

1. Introduction / Continuous Mining & RWE
2. Changing Challenges and Megatrends and how can continuous mining solve that problems?
 - Megatrend Carbon Reduction
 - Megatrend Remote Inspections
3. Conclusion and Outlook



Deutsch-Peruanische
Industrie- und Handelskammer
Cámara de Comercio e Industria
Peruano-Alemana



1 Introduction / Who we are

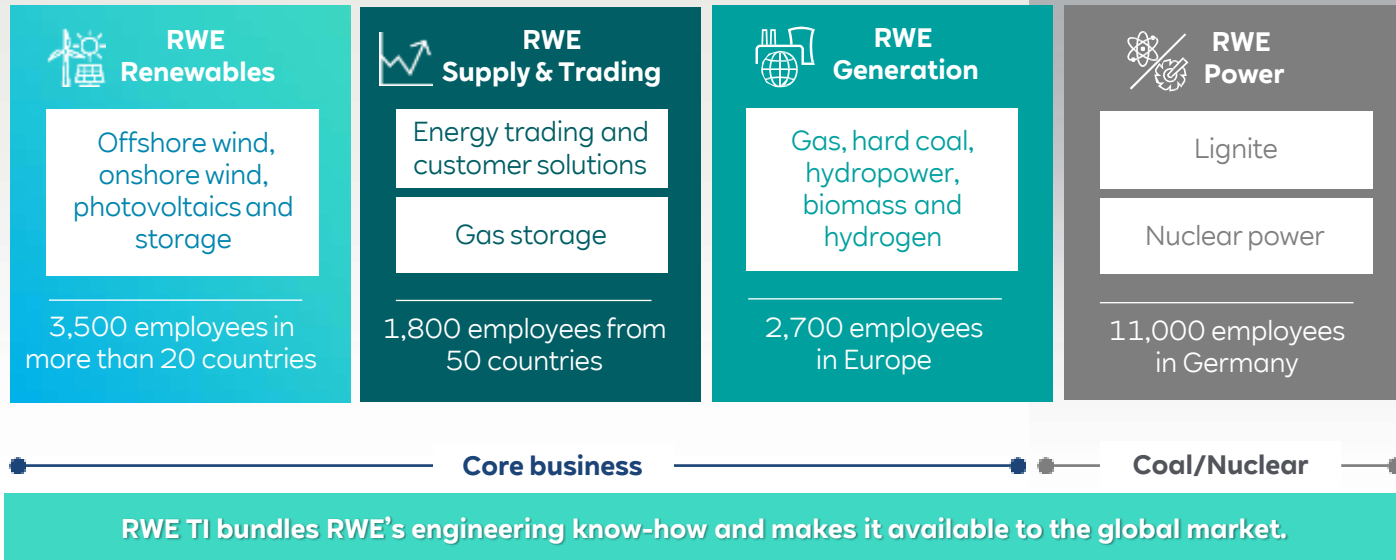


Deutsch-Peruanische
Industrie- und Handelskammer
Cámara de Comercio e Industria
Peruano-Alemana

RWE TI is your gateway to the know-how of the RWE Group

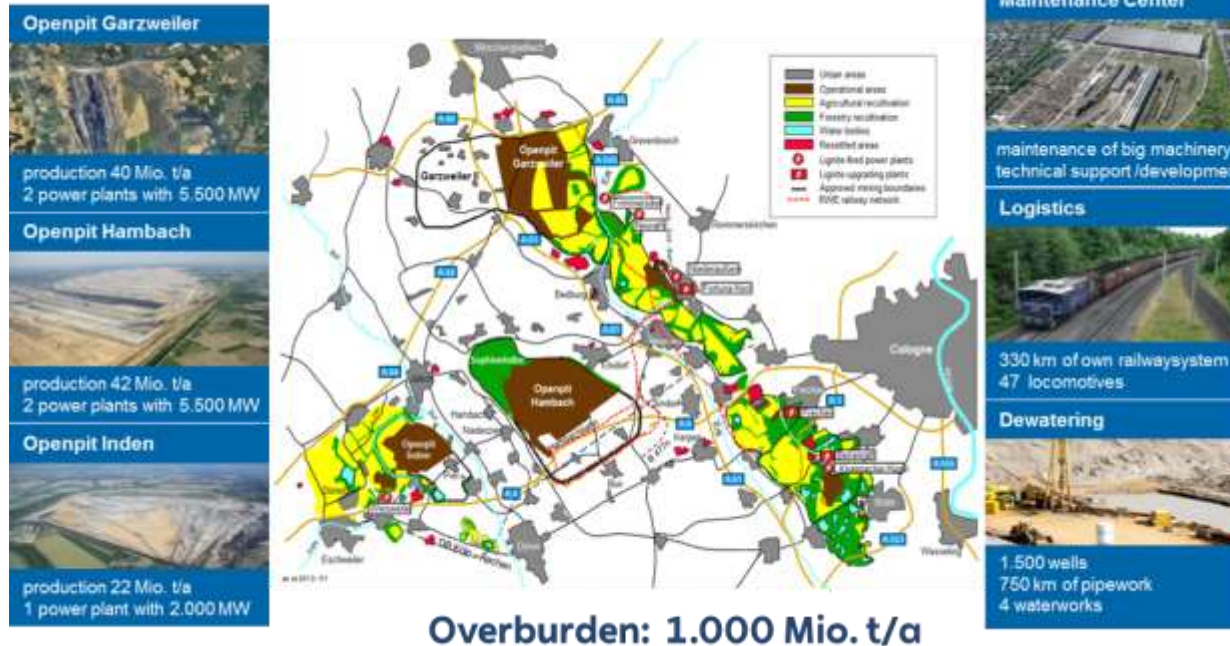
RWE

Operative business

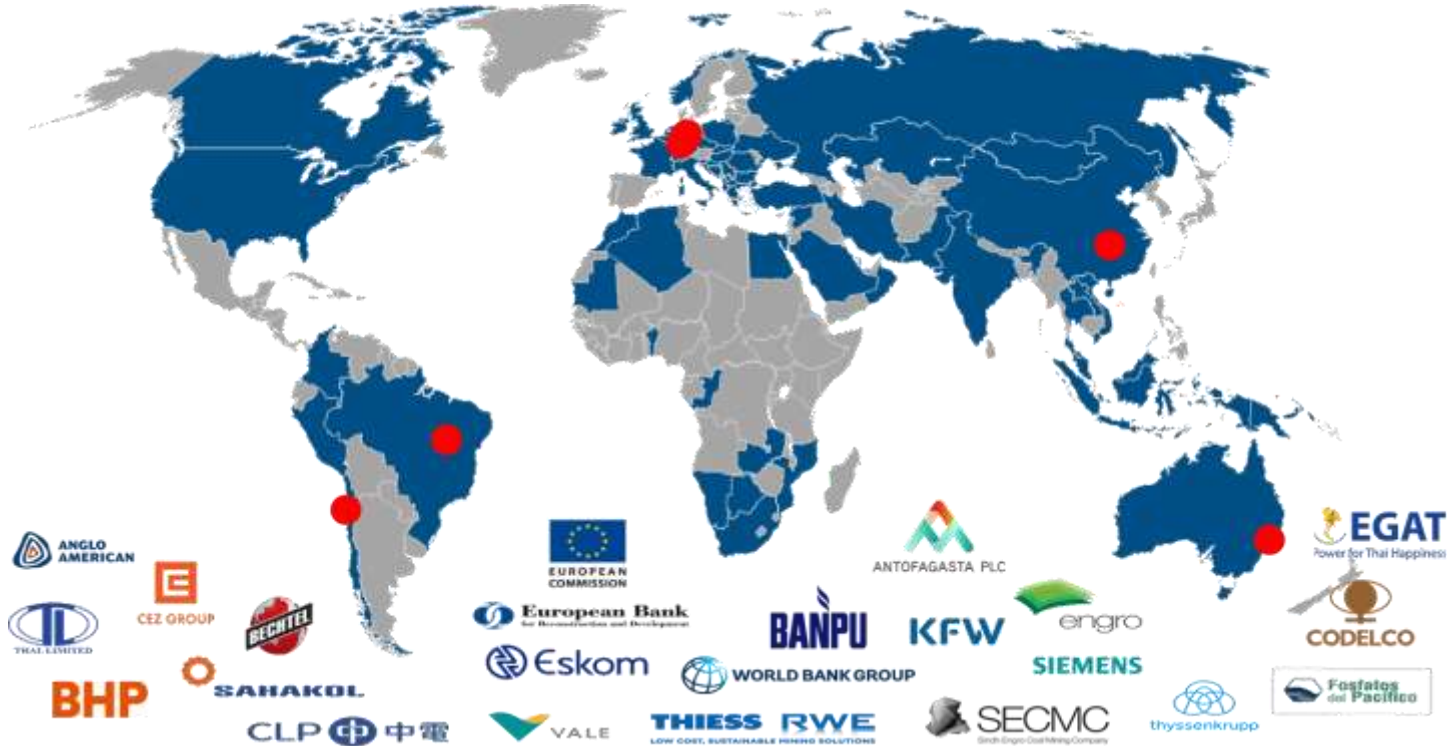


Last updated on 31/12/2020, 2020 Annual Report

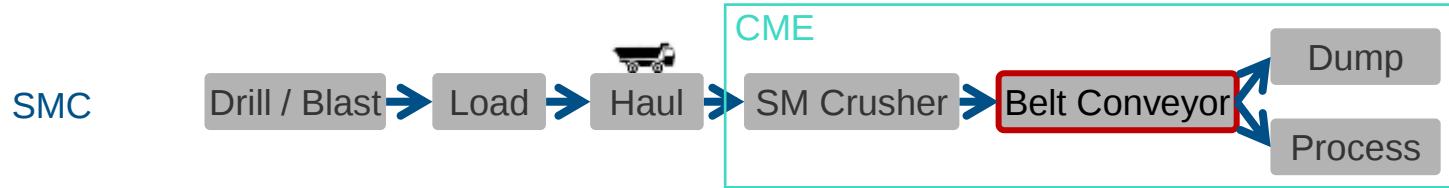
RWE TI with a strong background in Germany's large scale mining operations



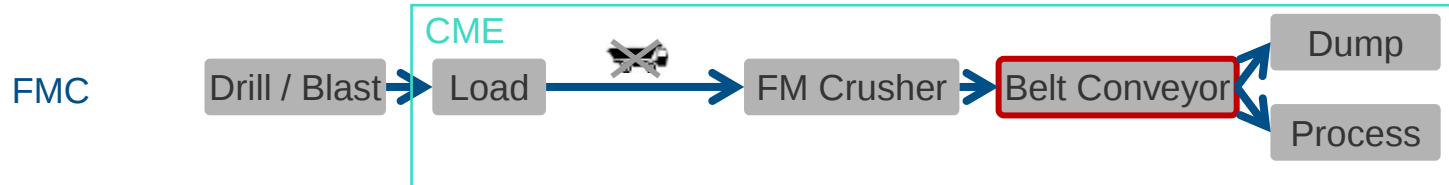
We are globally operating mining consultants with a strong focus on continuous mining



Continuos Mining Equipment (CME) for Hard Rock OPS



Input Crushing and Conveying (IPCC)



Impressions from our Operations





2 Changing Challenges for Large Open Pit Mines



Deutsch-Peruanische
Industrie- und Handelskammer
Cámara de Comercio e Industria
Peruano-Alemana

What are the Challenges in Mining?

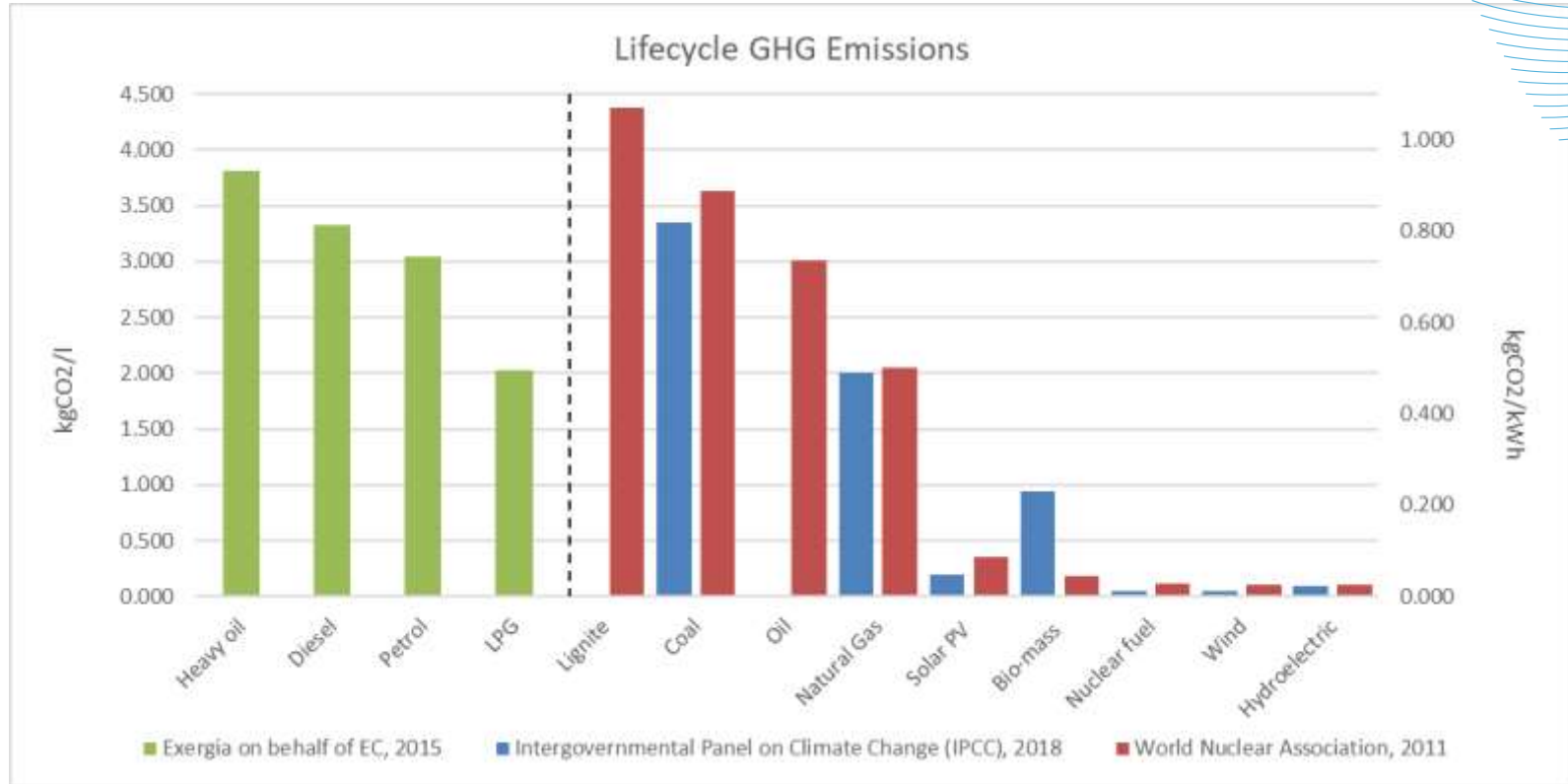


Can IPCC / Continuous Mining Contribute to solve that Challenges in Large Scale Mining Operations?

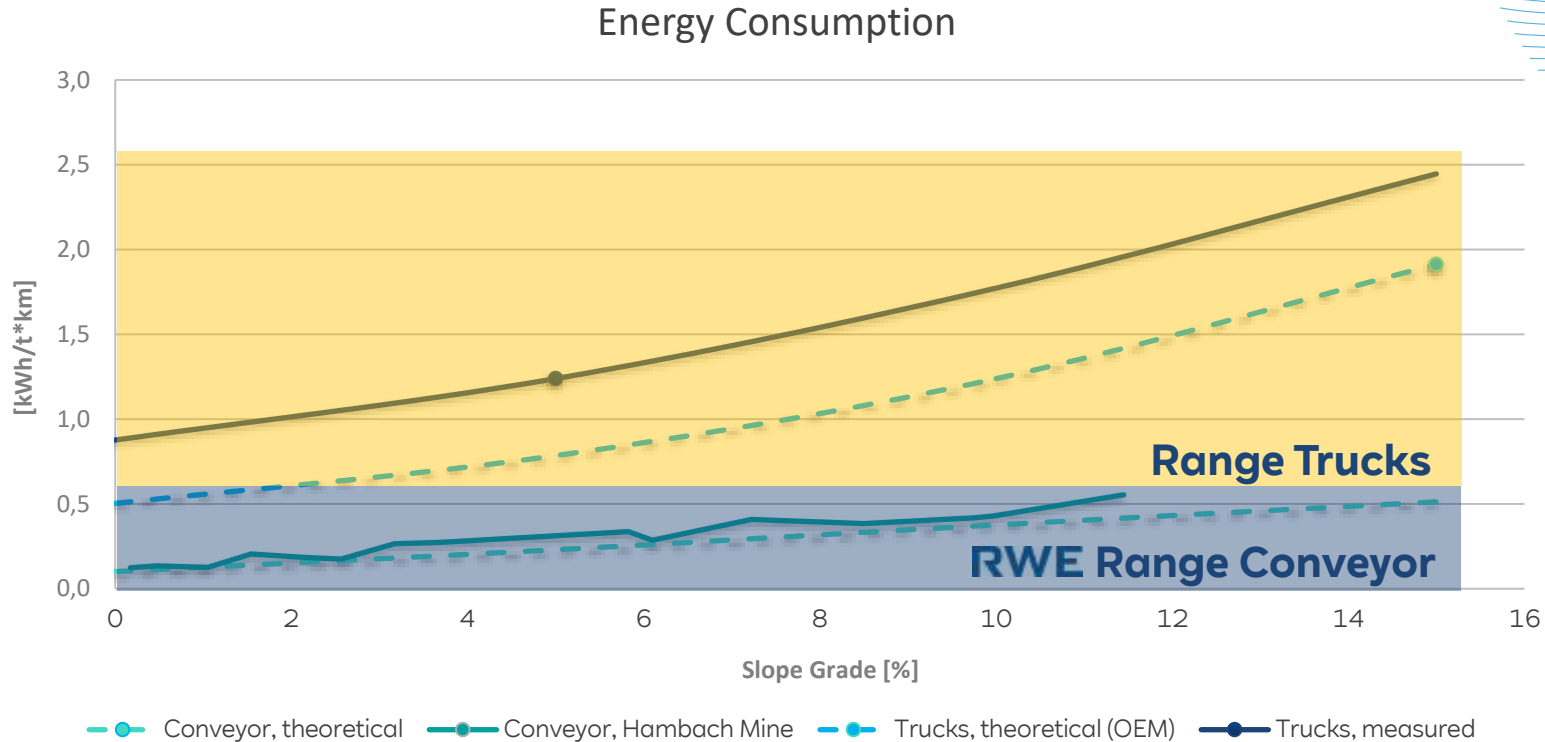
What are the Challenges in Mining?



GHG Footprint Comparison of different Energy Sources



Energy Consumption of Material Transport Modes



Environmental Impact

CO₂ Emissions & Employment

In-pit Crushing and Conveying positively impacts the environment when:

- The technology/equipment that replaces truck haulage uses renewable electricity or an energy mix – up to 85% of Greenhouse gas (GHG) emission reduction can be achieved if the IPCC equipment is powered by e.g. hydro energy!
- The generation of dust by truck haulage is an issue – conveyor transport generates less dust and can be easier suppressed (covered conveyors, belt cleaning devices,)
- The consumption of water for dust suppression is an issue – with the application of continuous mining and material handling equipment water usage for dust suppression can be limited to material transfers and conveyors only



CO₂ reduction potential of IPCC:
30 – 85% (compared to conventional S&T)!

What are the Challenges in Mining?



Carbon Reduction



Integration of Renewables



Remote Work



Environmental Protection
Dust & Water

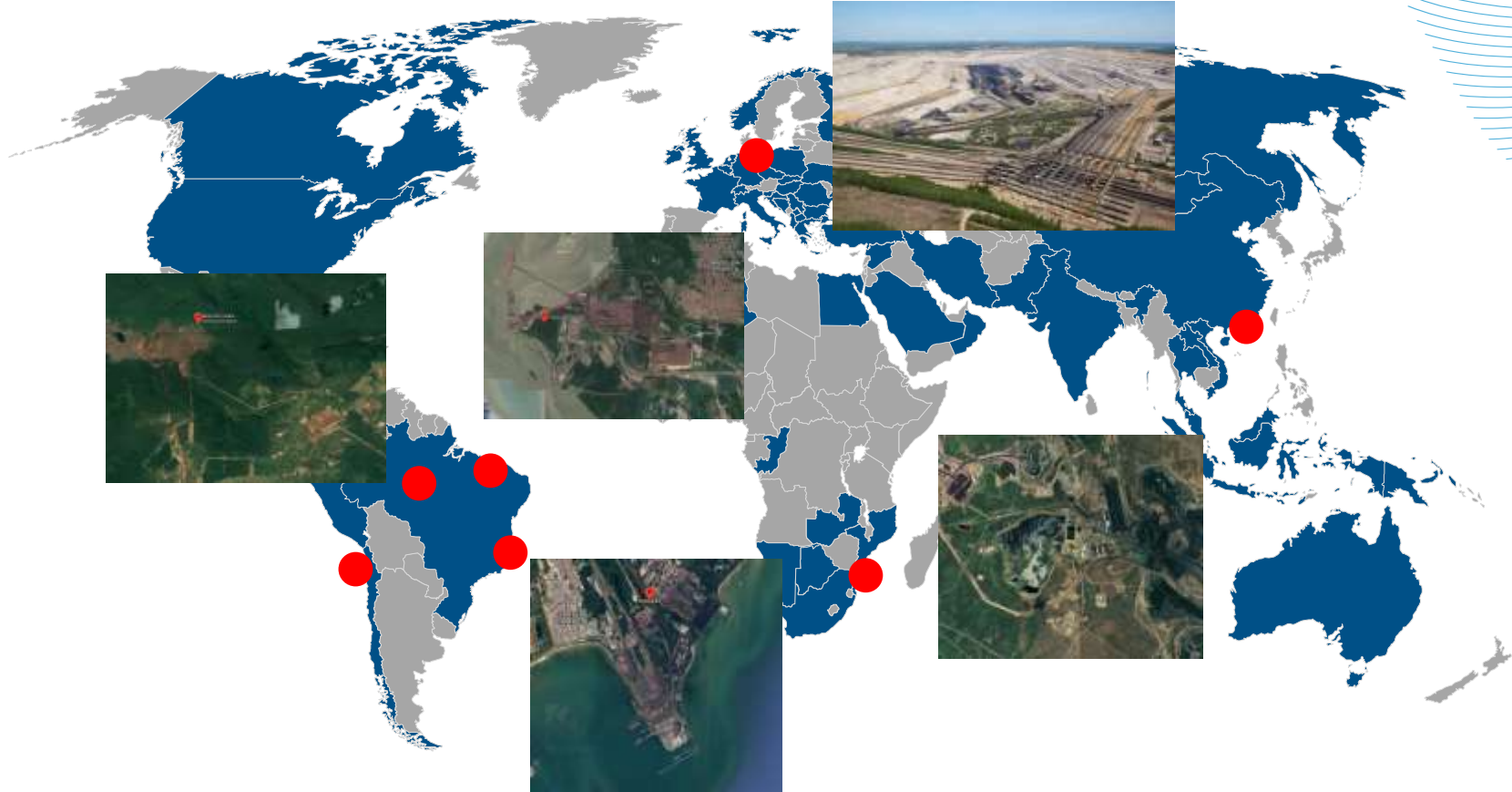


Finding Personnel &
Qualification



Deepening of Deposits

Remote Inspections for Customers Worldwide



Remote Auditing for Large Mining Operations



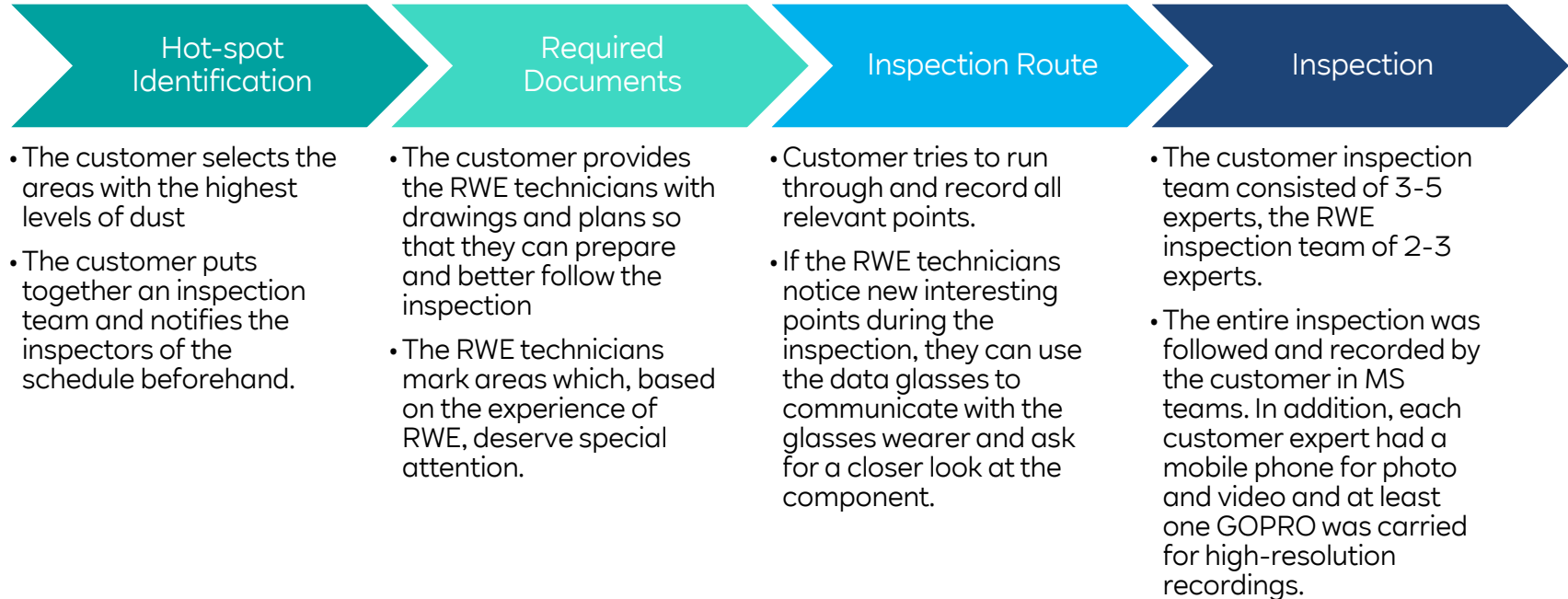
Inspection Tool

RealWear HMT-1



Vorbereitung und Ablauf der Inspektion

Workflow





3 Conclusion and Outlook



Deutsch-Peruanische
Industrie- und Handelskammer
Cámara de Comercio e Industria
Peruano-Alemana



Carbon Reduction



Integration of Renewables



Environmental Protection
Dust & Water



Remote Work



Finding Personnel &
Qualification



Deepening of Deposits

Can IPCC / Continuous Mining Contribute to solve that Challenges in Large Scale Mining Operations?

YES

Thank you !

Dipl.-Ing. Arie-Johann Heiertz

Head of Mining and Materials Handling
RWE Technology International GmbH
Ernestinenstr. 60
45141 Essen / Germany

+49 (0) 151-15177948
arie.heiertz@rwe.com



Deutsch-Peruanische
Industrie- und Handelskammer
Cámara de Comercio e Industria
Peruano-Alemana