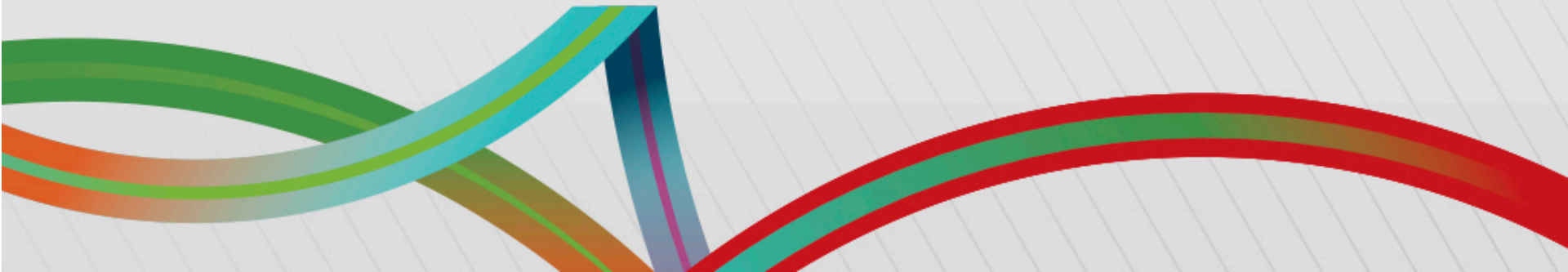




Where needs take us

The RECOPHOS-Process P4 from Sewage Sludge Ashes

01.12.16





- **Estimated Phosphate Reserves: appr. 71 bill. Tons**
- **Total Production: appr. 230 mill. Tons per Year**
- **Estimated secured Supply Time: > 300 years**
- **But Europe has lack of Phosphate Resources, and therefore needs Imports up to 10 mill. Tons**

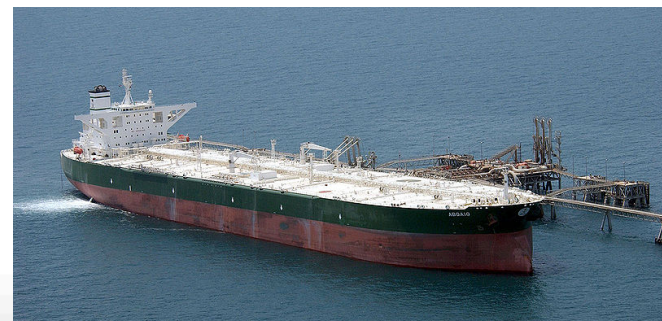
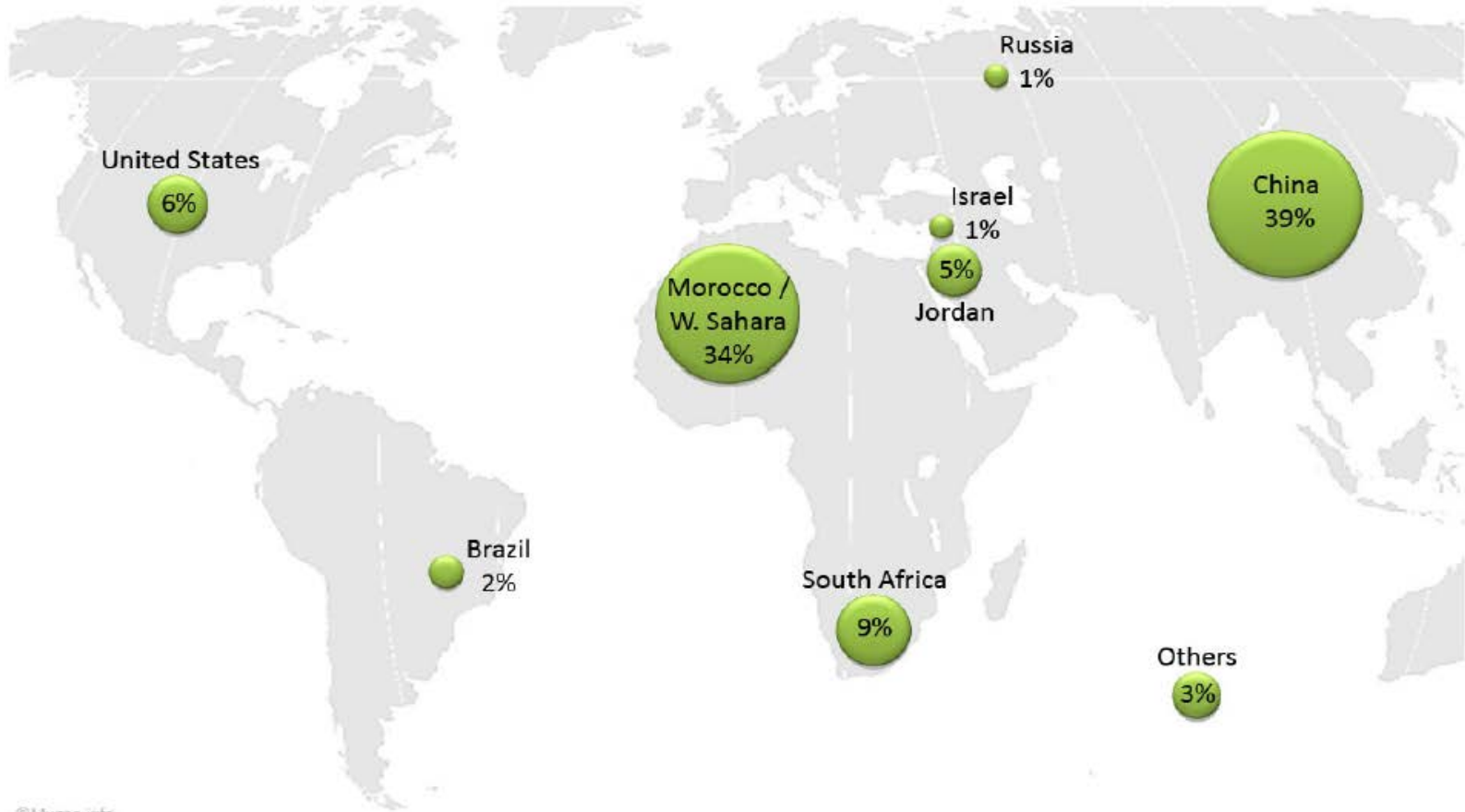


Figure 2: World rock phosphate mine reserves 2005. (Data source: Röhling, 2007.)



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P-Recycling Potential of Germany up to

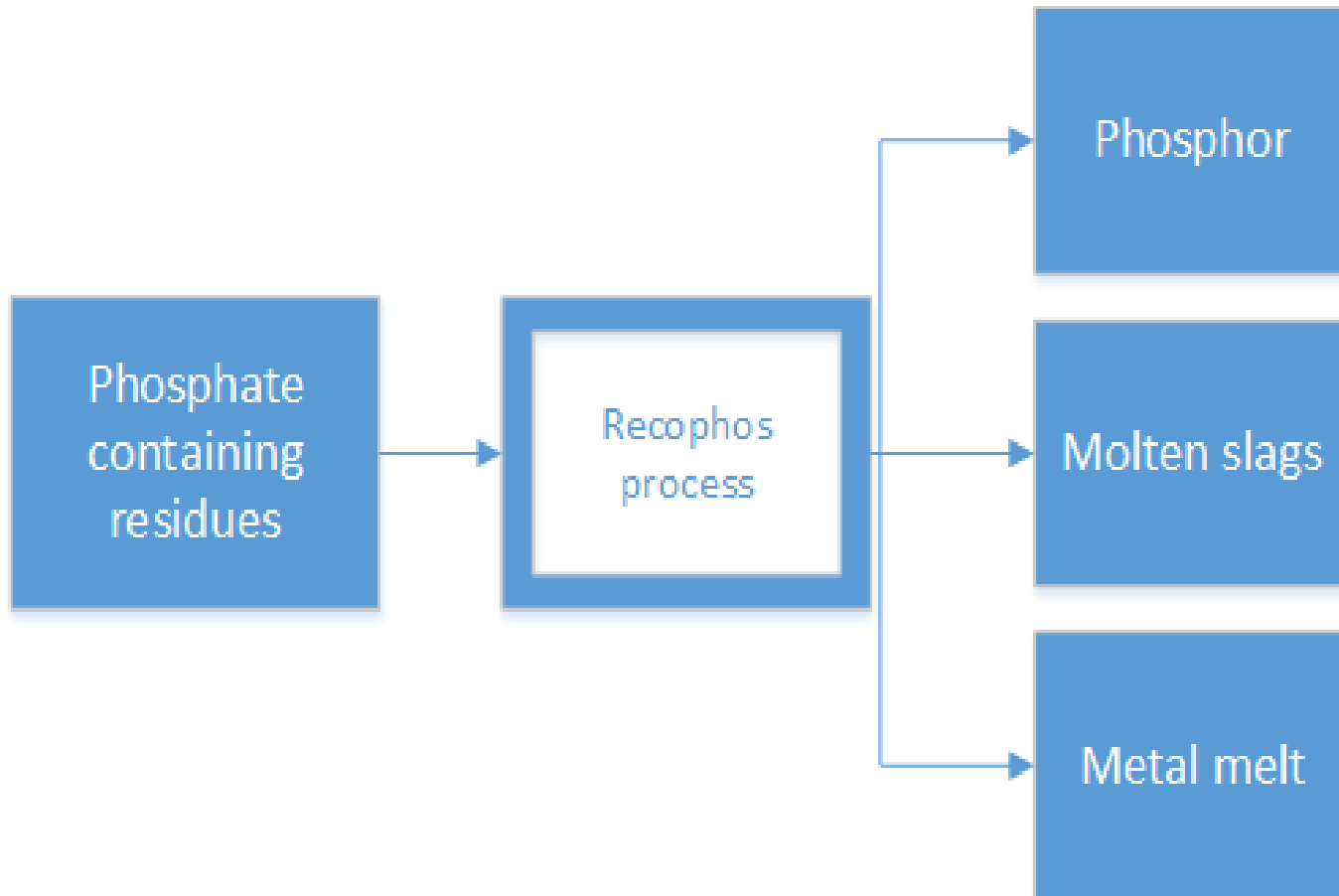
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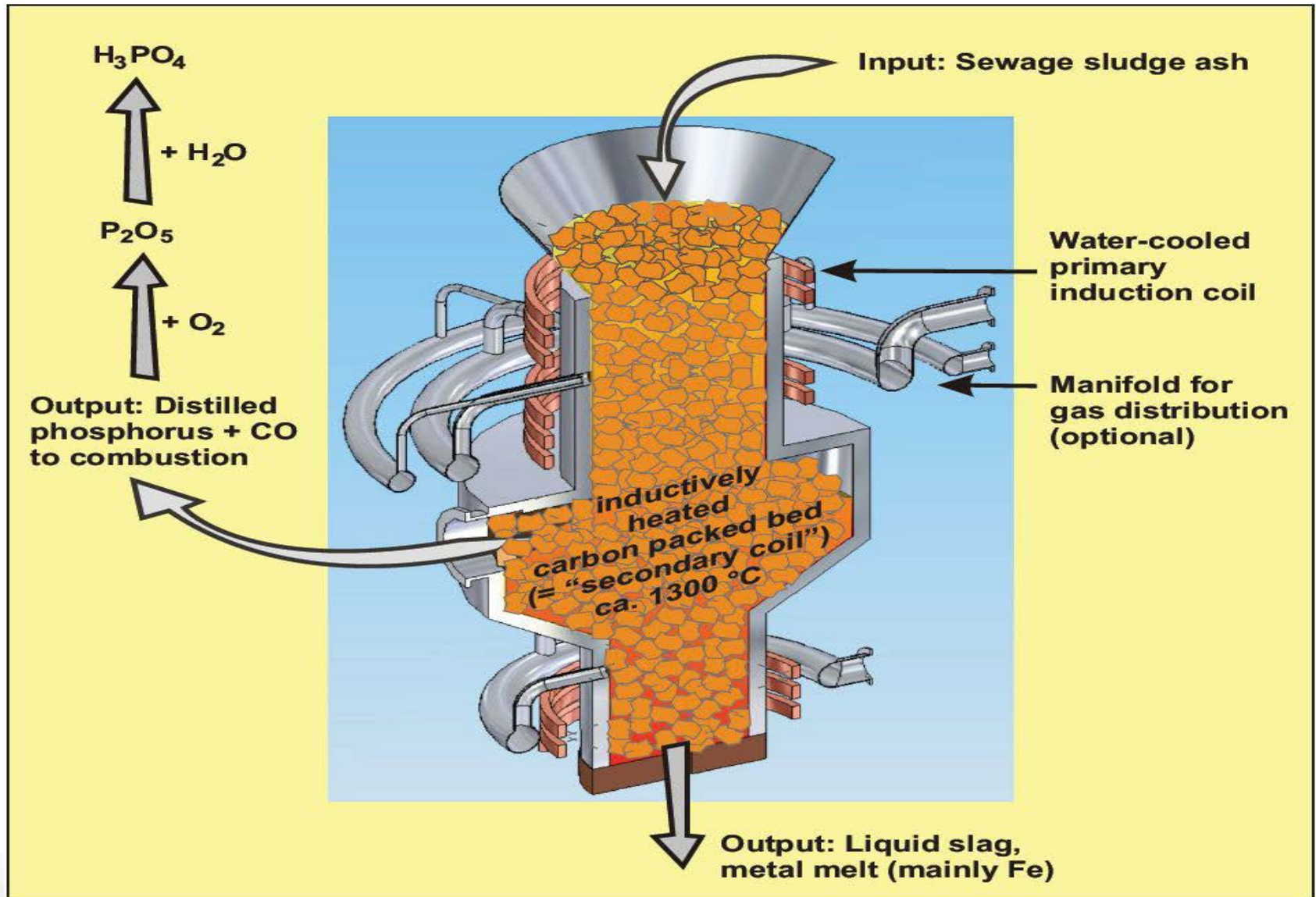
Of which > 50% is already economically interesting and growing.

P-Recycling is requested by the EU and German Government

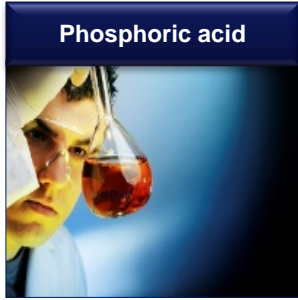
Several Recycling Processes in Test & Development

Other European Countries in similar situation or even advanced



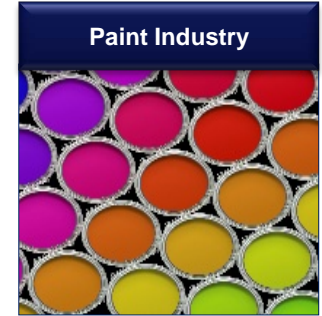


Phosphorus for many Applications



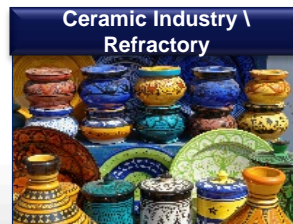
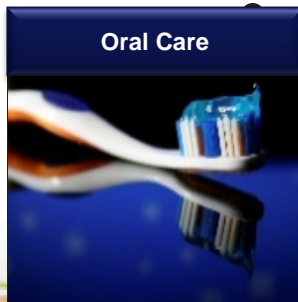
P4

for



- Phosphoric Acid (TG, FG, EG)
- FG/TG-Phosphates (Na, K, Ca, NH₄, Mg)
- Phosphorus Chlorides (PCl₃, POCl₃, PCl₅)
- Phosphorus Pentasulfide (P₂S₅)

Phosphorus Oxides (P₂O₅, P₂O₃)



Thank you