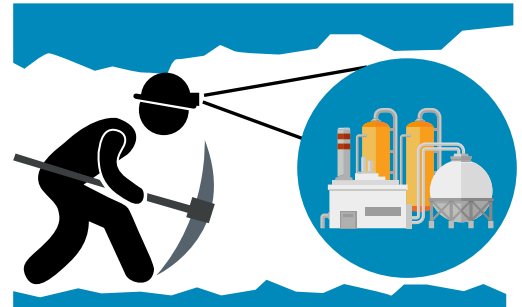


CASE WATCH 06 : COKE VALORISATION

Transform the coke from industrial steam crackers into raw materials for steel and cement industries.

Reduce the use of primary resources by valorising secondary materials in another sector.



VALORISING COKE

KEY INSIGHTS

- value waste streams
- reduce primary resources
- reduce CO₂ emissions
- create new markets

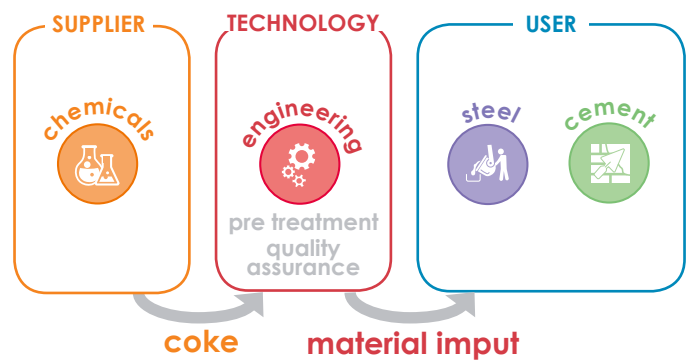


Figure 1: Synergy scheme ¹

CROSS-SECTOR COLLABORATION

Refineries have a high potential to better valorise coke co-products.

Steel and cement industries have a growing demand for innovative (secondary) materials.

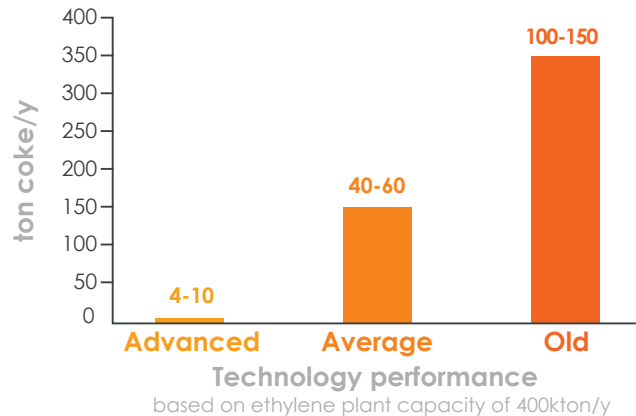


Figure 2: Coke production potential ^{1,2}

SUSTAINABILITY IMPACT

Wins for industry

- > for suppliers: reduction in waste¹
- > for industry: 10-30% energy gains/ton coke (vs coal)³

Environmental gains

- > virgin resource savings:
- % carbon in coke defines coal substitution rate¹

Wins for society

- > public health benefits due to emissions reduction
- > improved business relations in regional clusters¹
- > job creation and new skills development

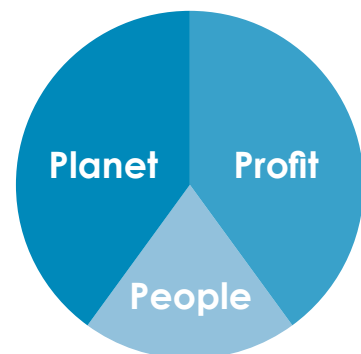


Figure 3: Sustainability ¹

REFERENCES

1. H2020: EPOS project. 2015 - 19.
<https://www.spire2030.eu/epos>
2. Joint Research Center: Directorate B – Growth and Innovation, Circular Economy, Industrial Leadership European IPPC Bureau. “ Integrated Pollution Prevention and Control (IPPC) - Reference Document on Best Available Techniques in the Large Volume Organic Chemical Industry,” IPCC final draft 2017. Available: http://eippcb.jrc.ec.europa.eu/reference/BREF/LVOC/LVOC_Final_Draft_February_2017_website.pdf.
3. Smallwood, I.M. “Handbook of organic solvent properties,” 1st Ed. Arnold/Hodder Headline Group, London U.K. 1996.