

Opportunities in the Solar Thermal Industry



Intro to E3 Energy

[KKI Video - https://youtu.be/laSw2p3q0RM](https://youtu.be/laSw2p3q0RM)

[CBC Video - https://youtu.be/JXANpox482k](https://youtu.be/JXANpox482k)



Klein Karoo Project Summary

- Project Cost: R4.9m
- Soltrain subsidy – 10%
- IDC funding: R1m (incentive for increased competitiveness in the textile industry)
- Total cost to client: ~R3.5m
- Performance monitoring highlight a direct saving of R450k (*ref: CRSES –Stellenbosch University*)
- Payback period – Closer to 6 years



South Africa's Energy Landscape

- Demand for heating accounts for 47% of the world energy demand.
- In South Africa estimates suggest that between 40 and 50% of all final energy needs is for heat.
- The demand for heat by industry alone accounts for almost 30% of the total energy demand in the country.
- Within industry, 66% of energy use is for process heating.



Challenge in SA Industrial Sector

- The country's industrial development policy has used the low electricity tariffs as a tool to attract investments. This has two broad consequences:

i) First, South Africa became an attractive destination for investment in energy-intensive industries, e.g. aluminium smelters, &

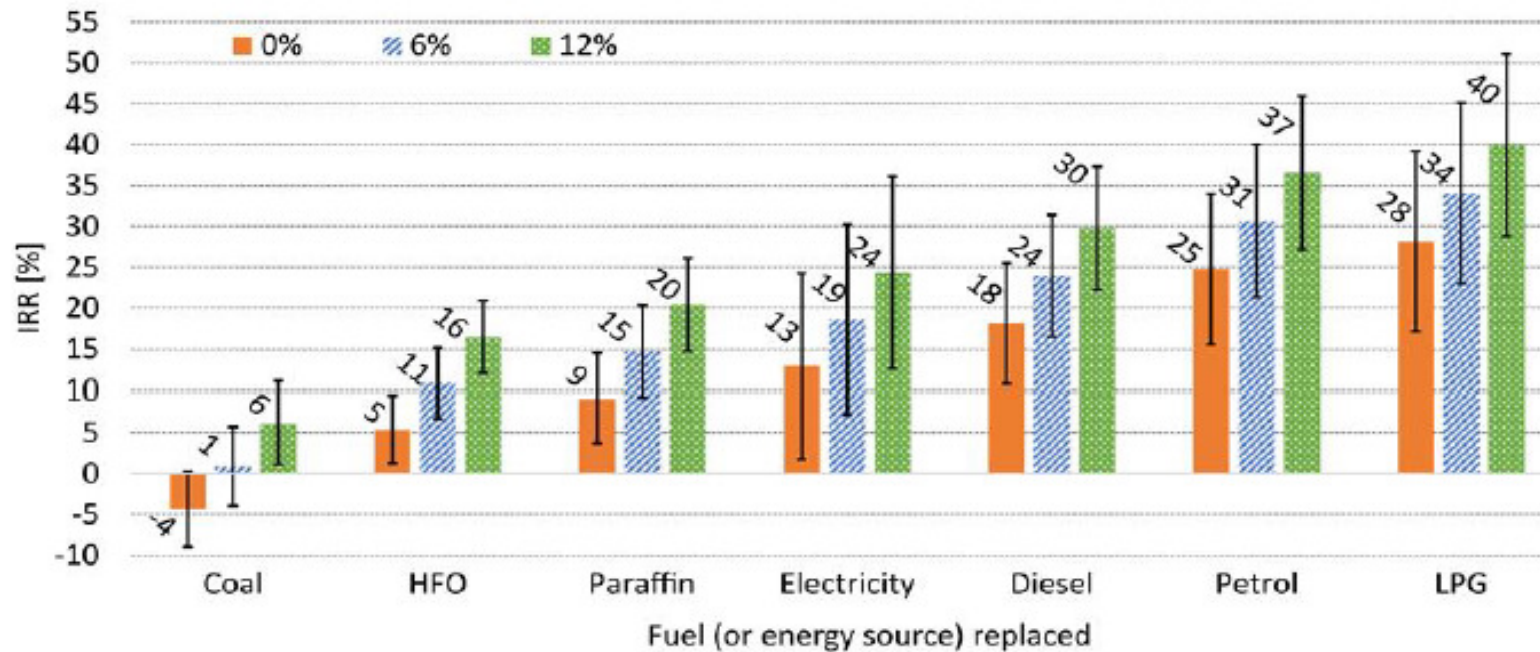
ii) The manufacturing industry in general became electricity-intensive & very energy inefficient.

In 2006 the industrial electricity tariff in South Africa was the lowest in the world (Sharan et al, 2016).



Solar Thermal Process Heating

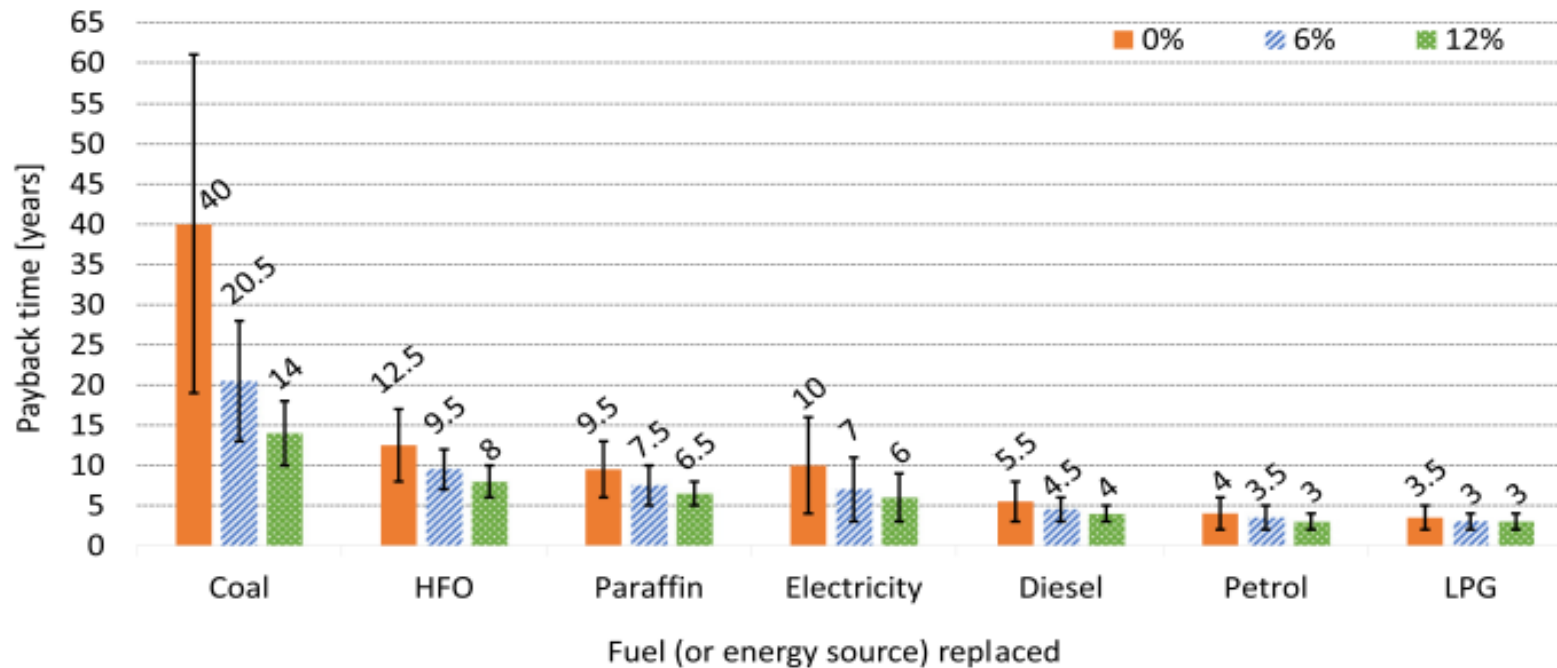
Figure 11: IRR for a current large-scale system with costs of 603 EUR/m² service life of 20 years replacing different conventional fuels



Source: Joubert et al. (2016, p. 820)

Solar Thermal Process Heating

Figure 12: Payback periods of current large-scale solar thermal system when substituting conventional energy source

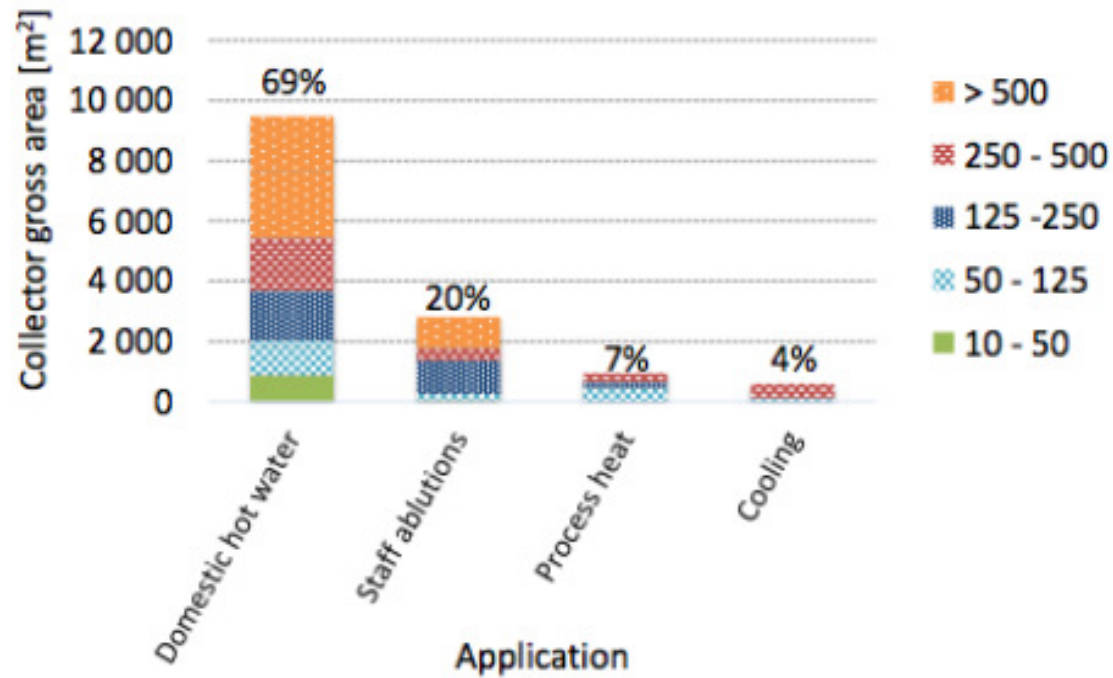


Source: Joubert et al. (2016, p. 820)



Problem

Figure 8: Large-scale solar water heating systems in South Africa per type of application



Solution

E3 Opticube:

- Containerized commercial & industrial solutions



OPTICUBE
EASY & LARGE SOLAR THERMAL KIT



Co-funding Opportunities

- Soltrain funding
- IDC funding
- Solar Payback initiative
- Direct or project-specific investment opportunities
 - e.g. ESCO models



Targeted funding (grants or favourable loans) and loan assurance (underwriting) for solar thermal systems could enable growth in the industry.

Questions?

