



Low Income SWH Mass Rollout: Is it possible?

UEMP Conference
21 May 2009

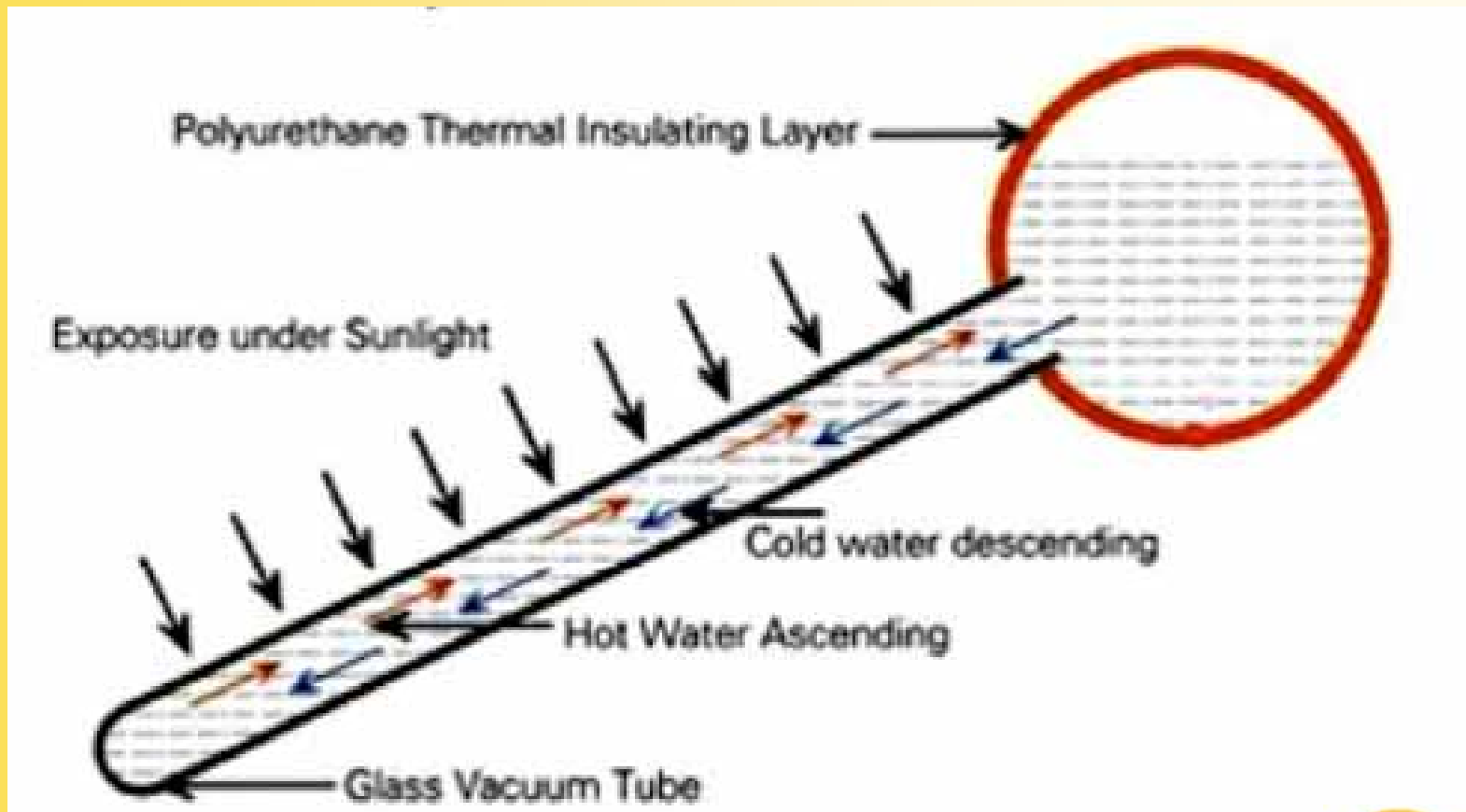


Background

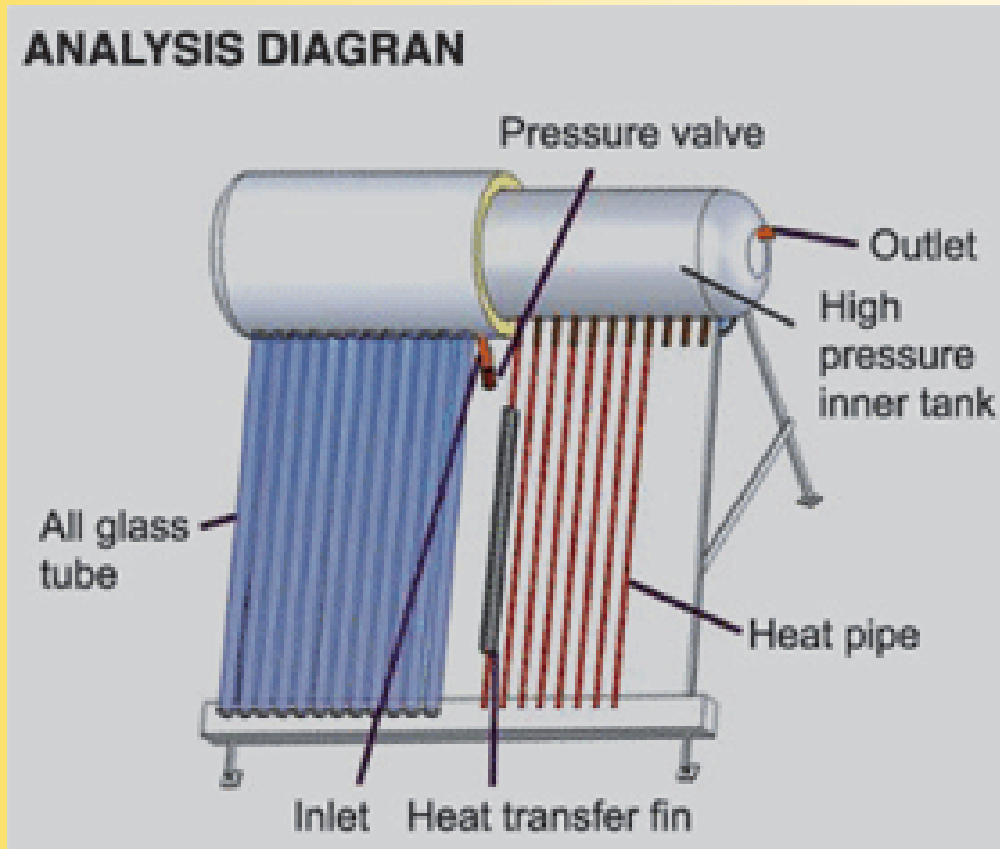
- High Pressure SWH vs Low Pressure SWH
- Materials used
- Cost differences
- Availability
- Pressure issues (mixing)



Typical Low Pressure System



Typical High pressure system



Materials

- High pressure
 - copper/stainless steel tanks,
 - often indirect systems – copper in tubes
 - Need to withstand high pressure
 - High pressure valves
- Low pressure
 - No copper
 - Need to withstand pressure of water weight – cheaper materials (fibreglass, polycarbonate, stainless steel), no expensive valves

Cost Differences

- Low pressure SWH typically R3000-R5000 installed for 100-110l
- High pressure typically R14000 installed for 150l, 50% reduction possible

Supply + Installation

- Imports from China
- Local manufacturers
- Training not lengthy – can provide jobs in low income areas

Low Pressure SWH Pros and Cons

Pros

- Low cost
- Additional Eskom SWH incentive available
- Low maintenance
- Undesirable scrap materials

Cons

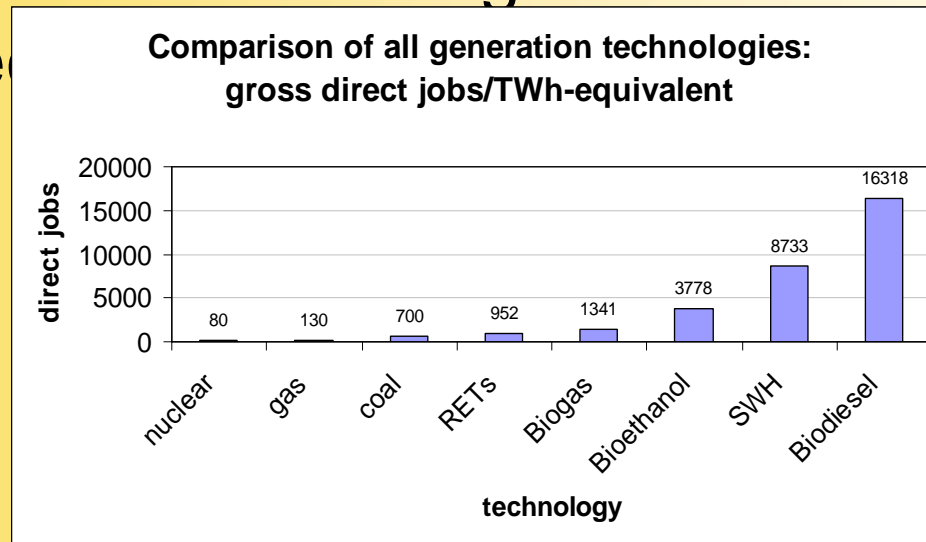
- Mixing problems
- Overflow (up to 4l/day)
- Clarity on health issues – is SWH water safe for consumption?

Maintenance

- Low maintenance
- No expensive high pressure valves, ball valve at inlet only
- Tube breakages – easy to replace although water loss inevitable
- Most systems come with 5 year factory warranty

The Facts about LI SWHs.....

- Growth in SWH industry will create jobs
- Many SA Cities have SWH targets as critical elements of their Energy Strategies
- LI SWHs are making financial sense if tackled correctly

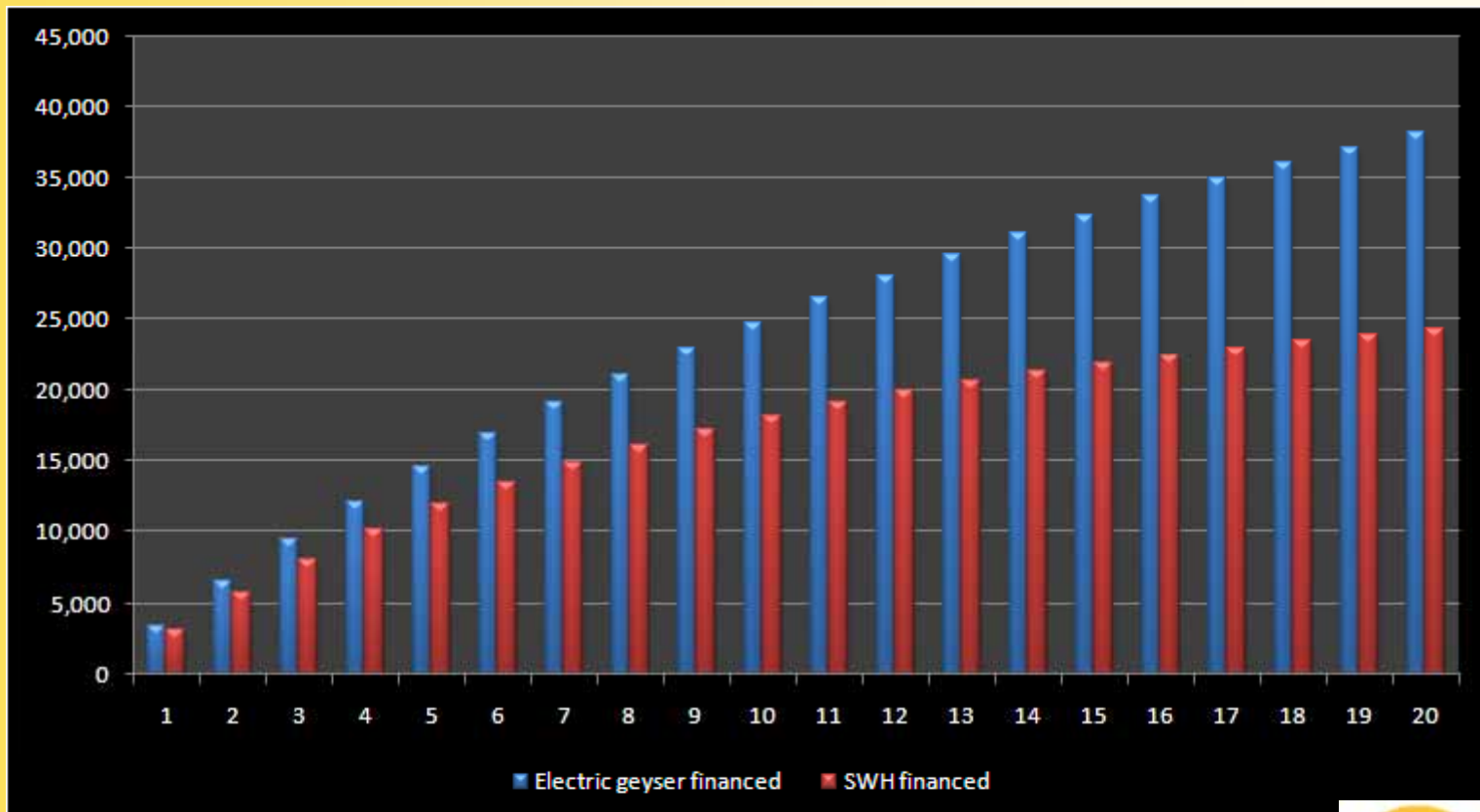


More info.....

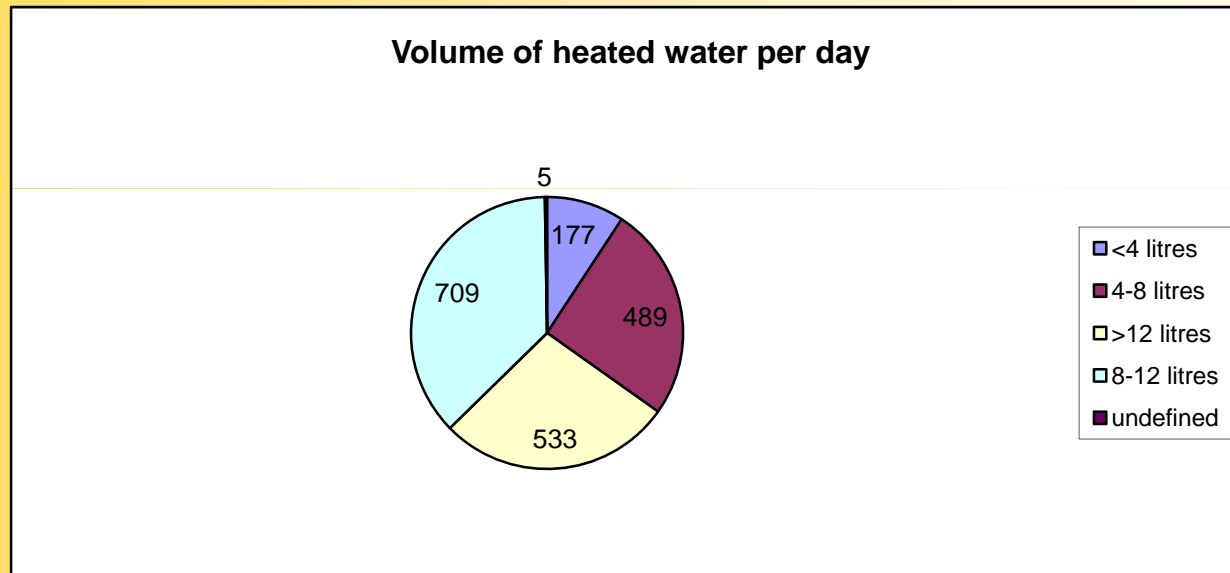
- Large proportion of population do not have access to hot water for sanitation
- As this sector develops, many will install electric geysers for hot water – suppressed demand
- Can potentially place large load on grid unless managed properly
- SWH water used for sanitation, as well as preheating drinking and cooking water

Combined operating and capital costs: High income

Bond repayment option high income



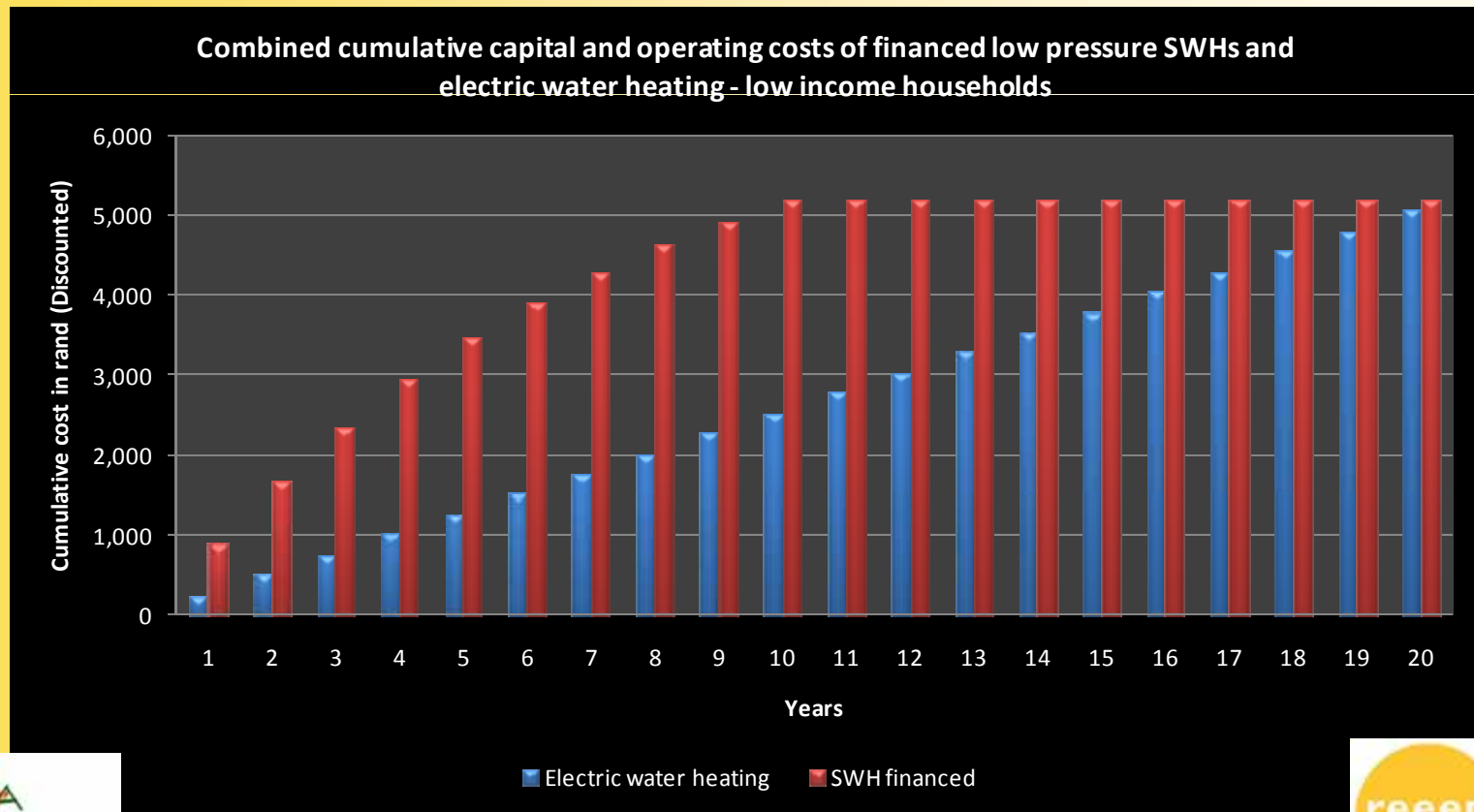
Water use in LI Households: Kuyasa survey



- Corbera, E., Wlokas, H., Wesselink, C., in preparation. Sustainable housing and poverty alleviation through the Clean Development Mechanism. Tyndall Centre Working Paper.
- Ave 12l/day = R21 pm

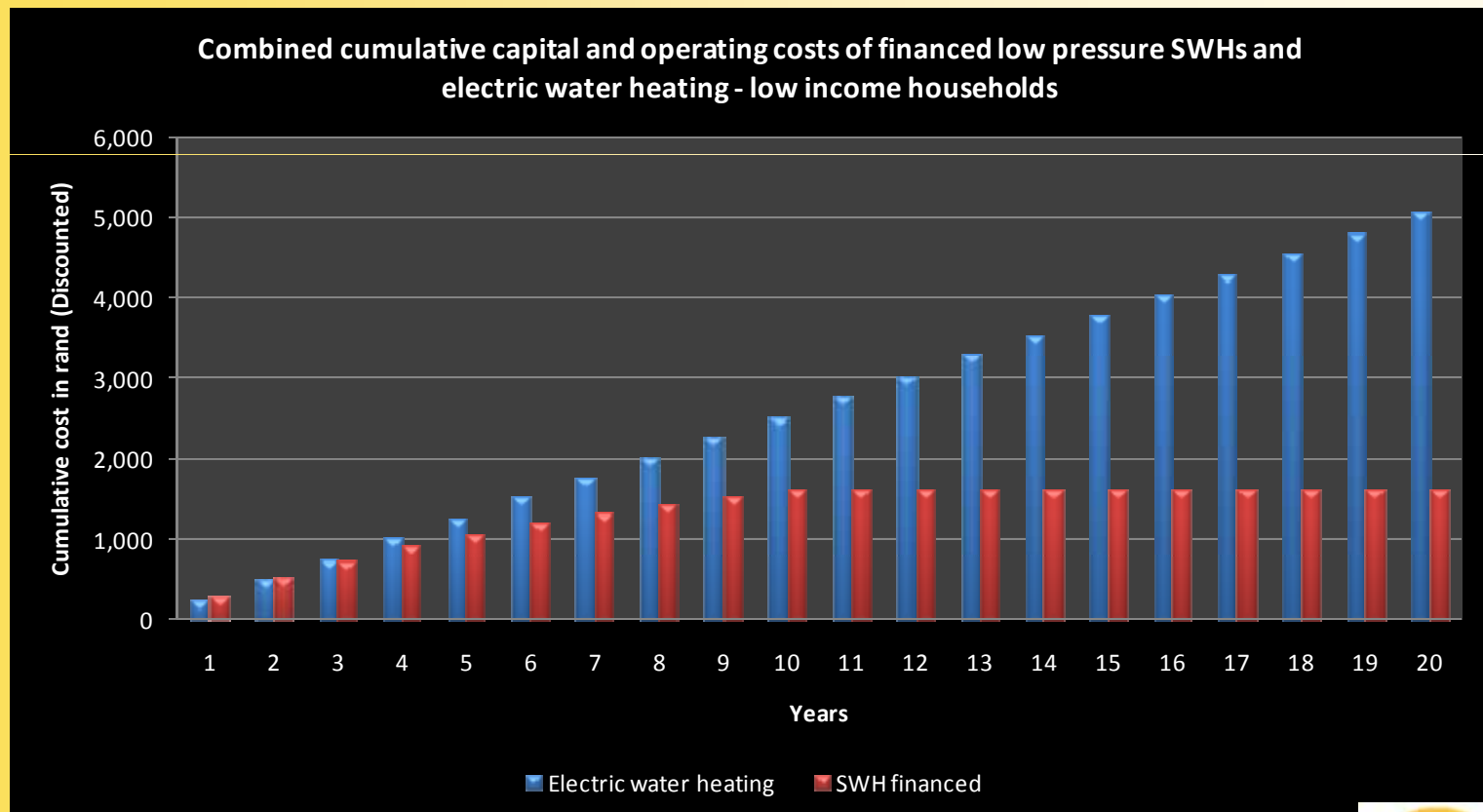
Combined operating and capital costs: Low income

- SWH repayment – (R4500 @ R75pm over 10 years – prime interest)
- 12l hot water/day against 100l hot water/day



Combined operating and capital costs: Low income

- SWH repayment – (R23pm over 10 years – 8%interest)
- 12l hot water/day against 100l



Business model basics

- CDM 'suppressed demand' methodology
- Eskom incentive
- Local employment
- Low monthly repayment (approx R20)
- Prepaid meter collection system/FBE

The table below provides an indicative quantitative financial analysis

Business Model

Cost of 100l SWH (installed including Eskom incentive)	R 3,500
Annual payment (Development bank @ 8% pa, 10 yrs)	R 521.60
Tonnes of CO2/unit/year	1.8
CDM Income pa (€10/T)	R 234.00
End user payment/year	R 287.60
End user payment/month	R 23.97

