

Important to
reduce the load
(use less energy)
before the energy
supply system can
work well!

<http://www.bajiroo.com/dont-overload-a-donkey-cart-16-funny-photos>

The Other Renewables Castlemaine – Introductory comments

12 August 2017

Alan Pears AM

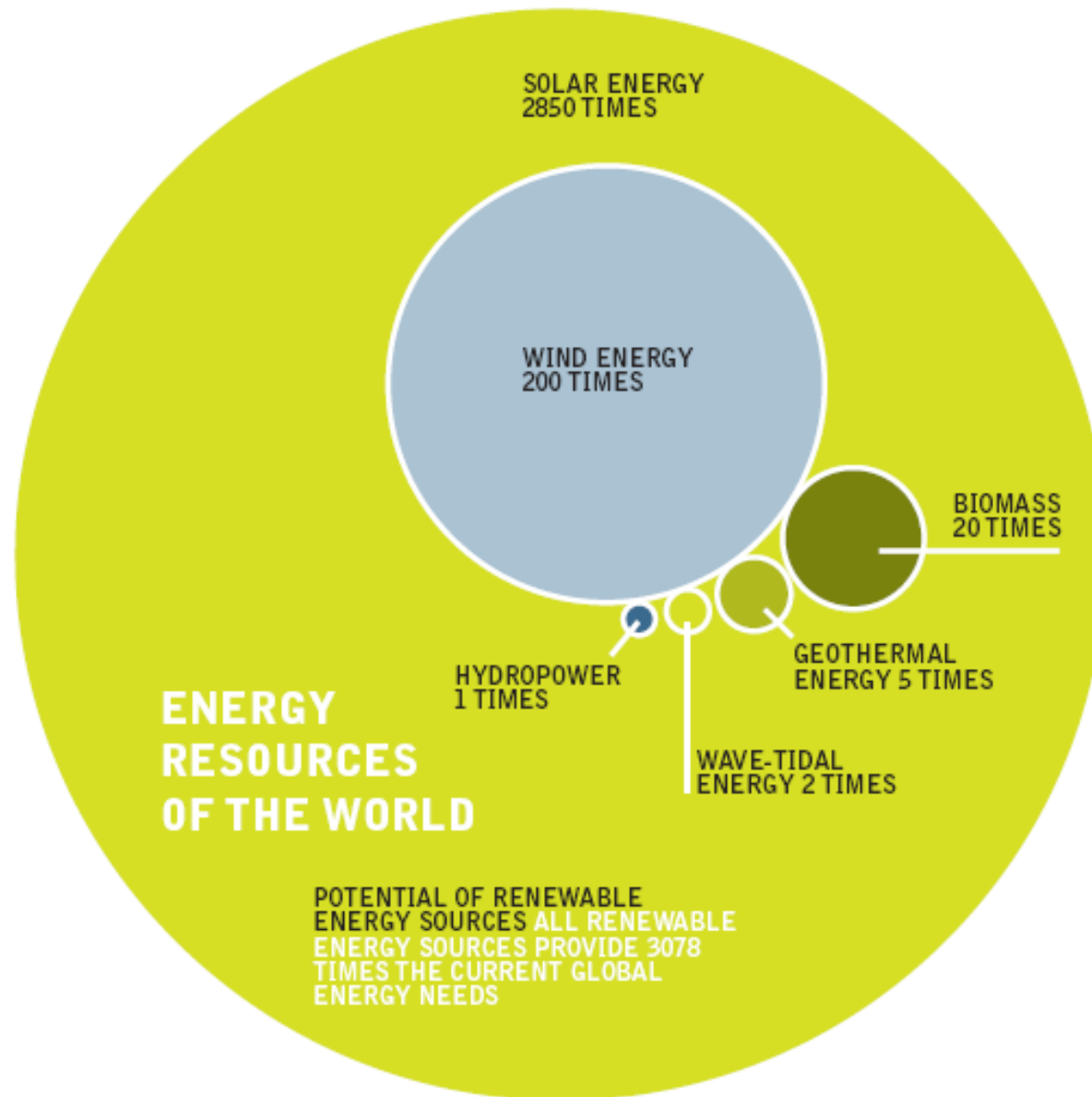
Senior Industry Fellow RMIT



Posted at
BAJIROO.COM

Thanks to Soren Hermansen from Samsø, Denmark for the picture idea

figure 30: energy resources of the world



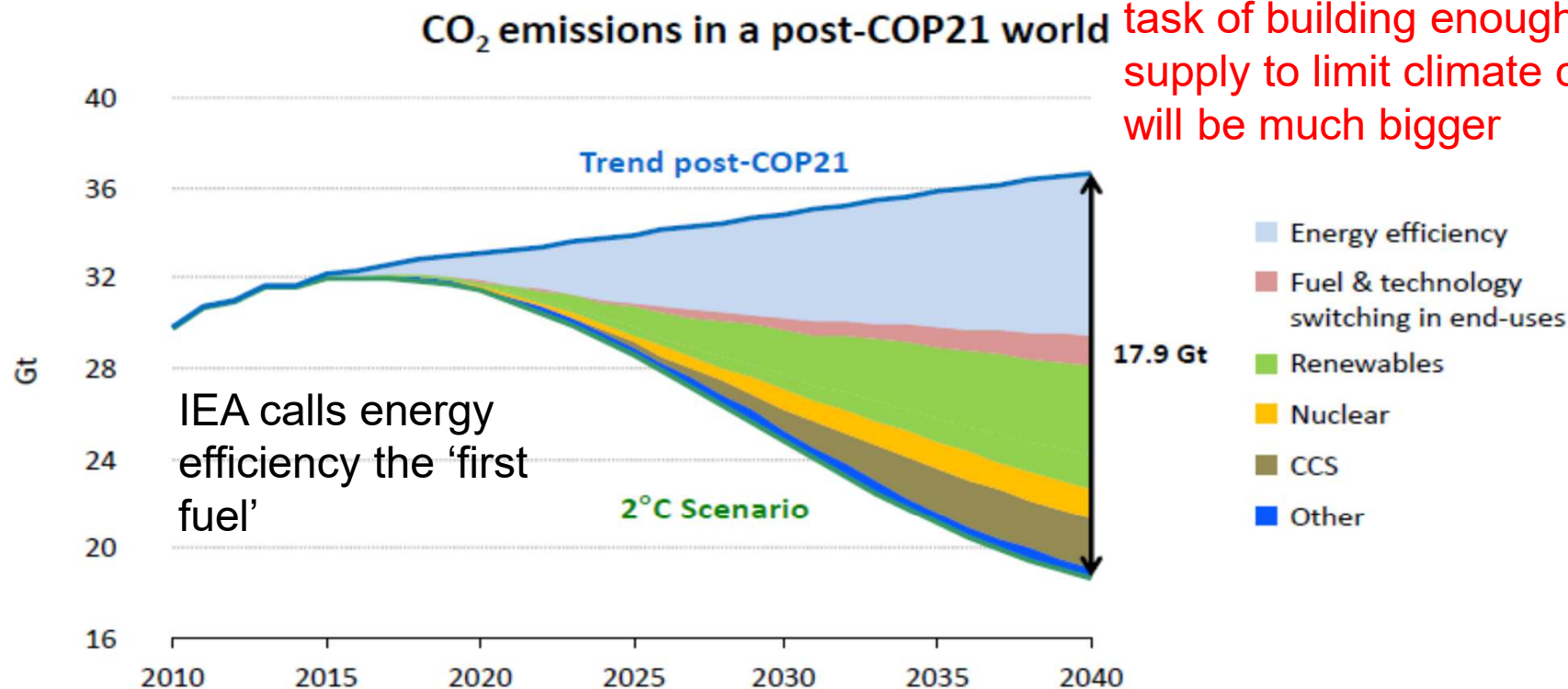
Global renewable energy resources compared with today's annual energy requirements (Greenpeace, 2007)

International Energy Agency emission scenario (F Birol, IEA *Energy Efficiency Post-Paris* presentation, EE Global Forum Washington DC 12 May 2016)

A 2°C pathway requires more technological innovation, investment & policy ambition

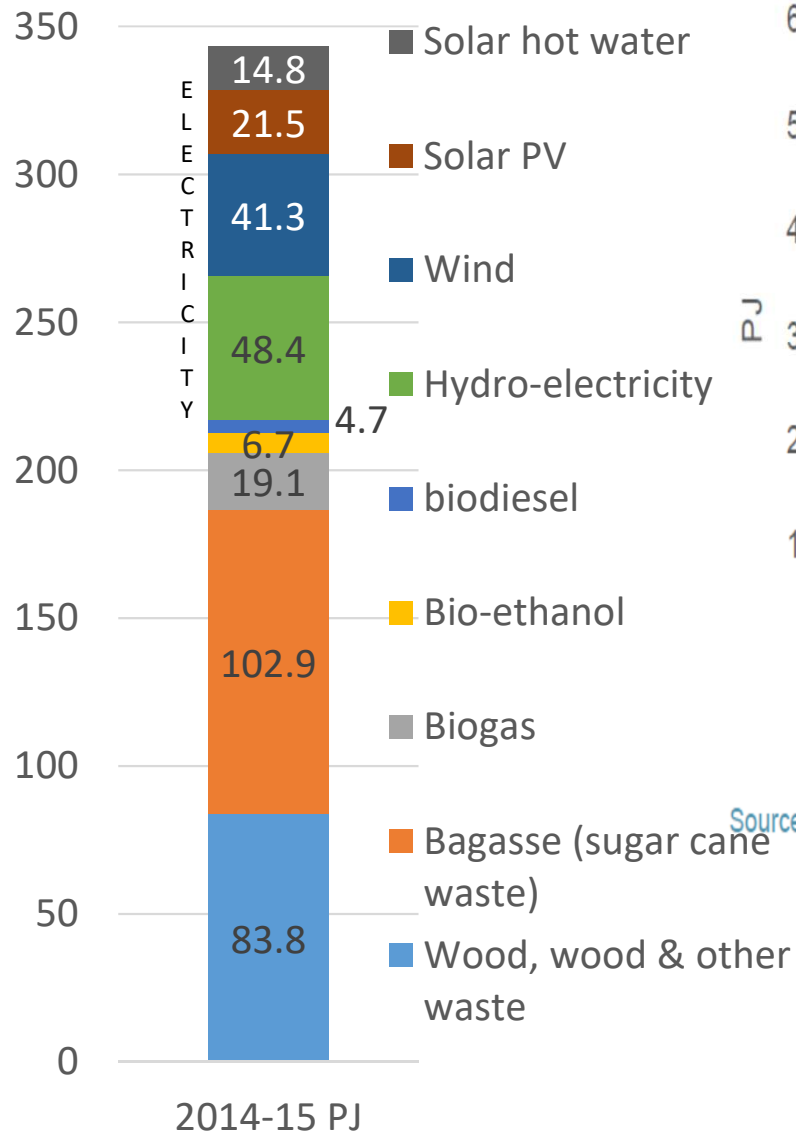


Without EE, cost and physical task of building enough zero C supply to limit climate change will be much bigger



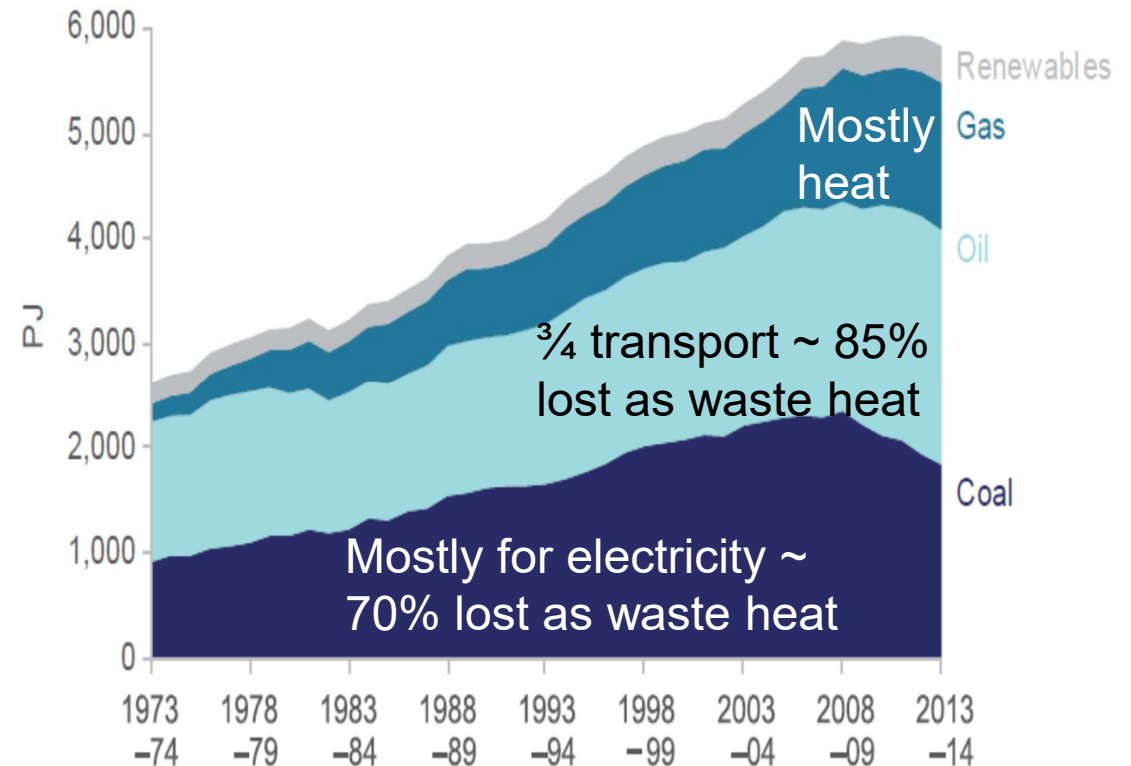
Massive additional investments in efficiency, renewables, nuclear power and other low-carbon technologies are required to reach a 2°C pathway

Renewable energy 2014-15 343 PJ not all PV and wind!



Australian Energy - overview

Figure 3.2: Australia's primary energy consumption, by energy type



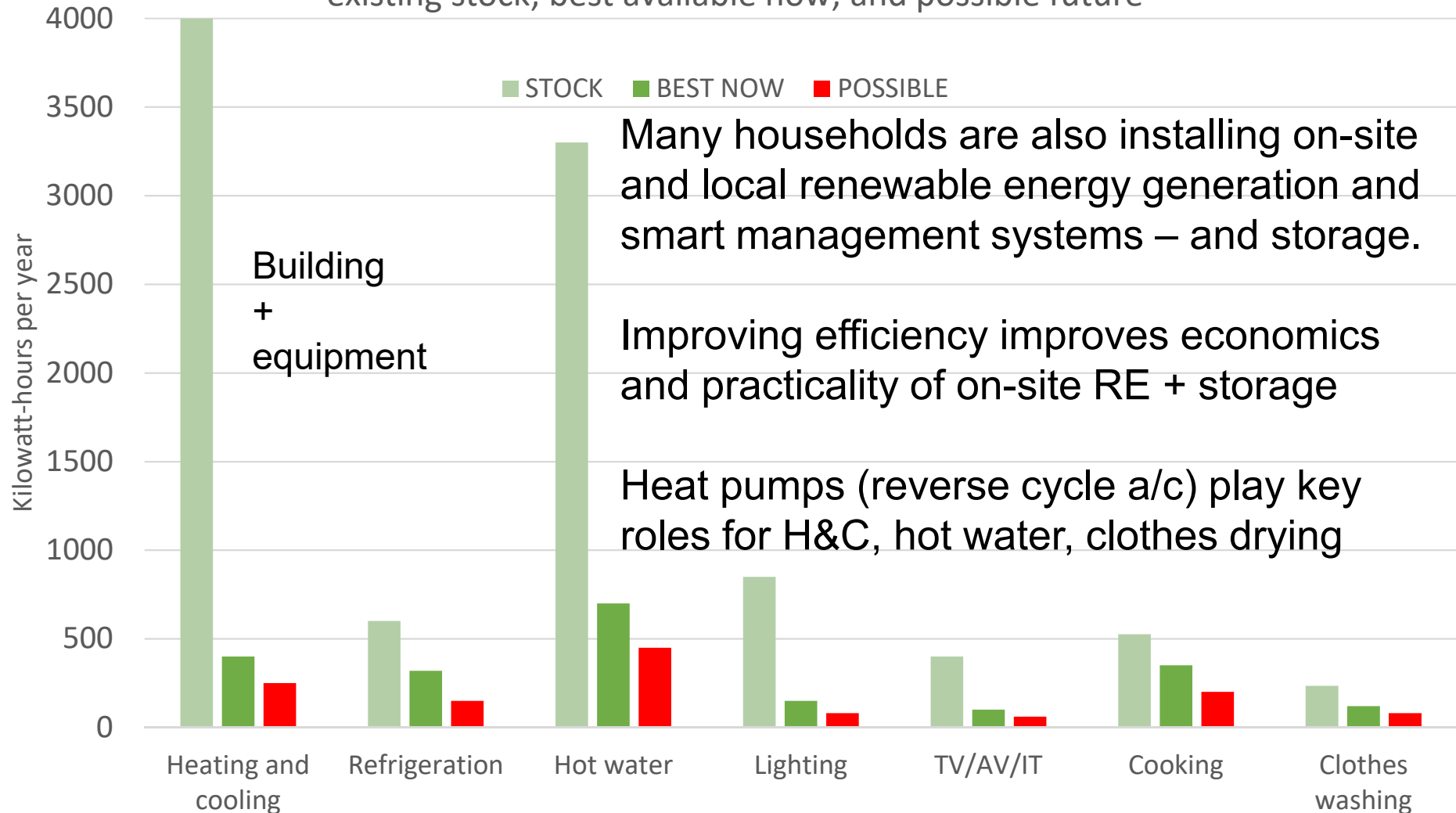
Source: Department of Industry and Science (2015) Australian Energy Statistics, Table C

From *Energy in Australia 2015*
Office of the Chief Economist
www.industry.gov.au/oce

Residential: Technology transformation

(Based on Pears presentation to Sydney A2SE Workshop, April 2014)

Annual electricity use for some activities in an all-electric Australian home:
existing stock; best available now; and possible future



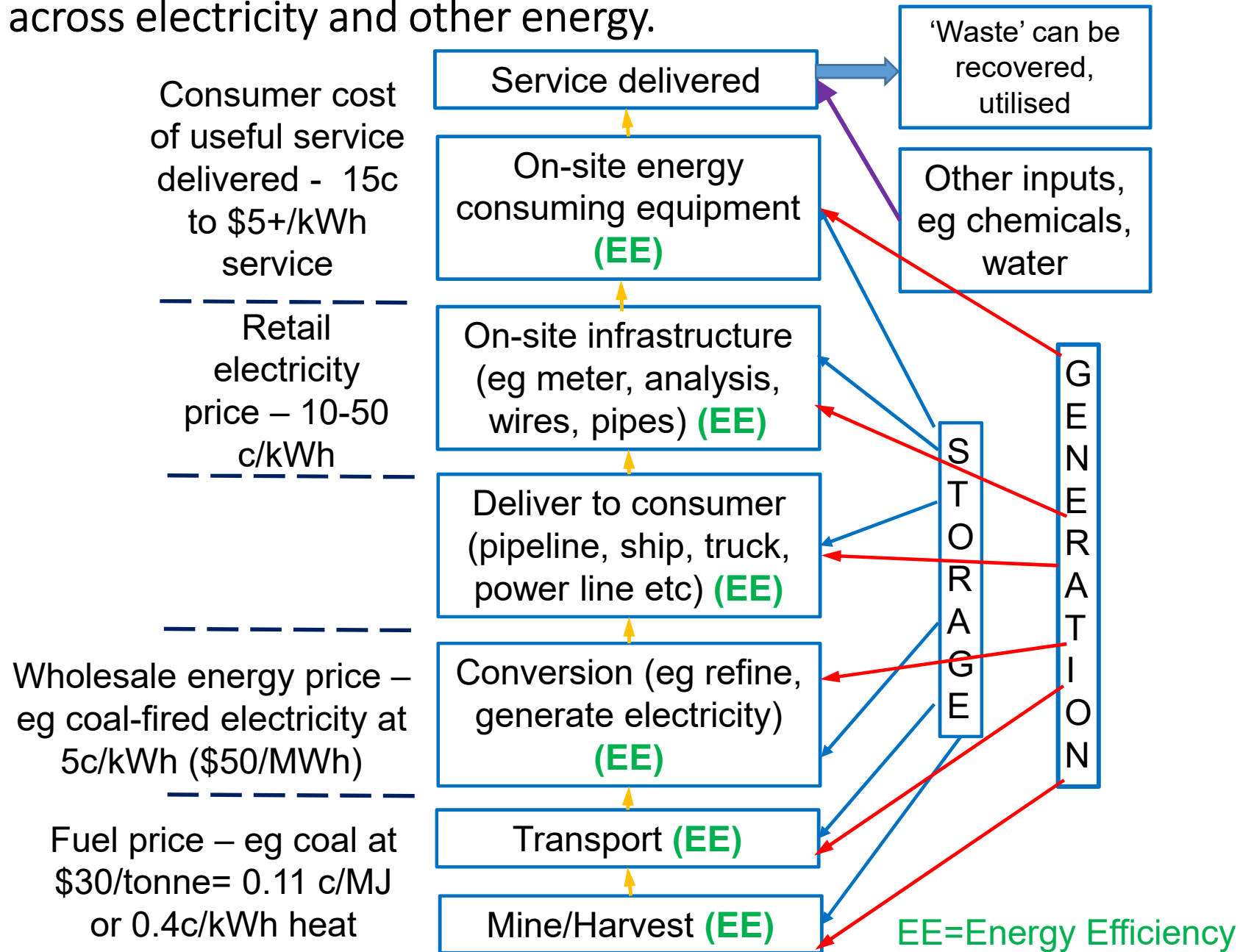
Building
+
equipment

Many households are also installing on-site and local renewable energy generation and smart management systems – and storage.

Improving efficiency improves economics and practicality of on-site RE + storage

Heat pumps (reverse cycle a/c) play key roles for H&C, hot water, clothes drying

Clean energy competes in all stages and markets across electricity and other energy.



Key points for today's session

- MASG is aiming for zero net emissions by 2025 – by cutting emissions, storing carbon (and buying offsets)
- Technologies discussed may not be cost justified in this shire here and now – but costs falling, technologies improving, smarter solutions emerging AND community benefits
- Topics today include
 - geothermal energy;
 - solar thermal (inc proposed 10 MW solar farm);
 - ground source heat pumps;
 - bioenergy;
 - mini-hydro and pumped hydro storage
 - carbon storage using biochar and increasing soil carbon;
 - energy from waste
- It is important that community engages and contributes to discussion and action