

Heating and Cooling in Deployable Camps



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Perspectives of Heat Pump Technologies

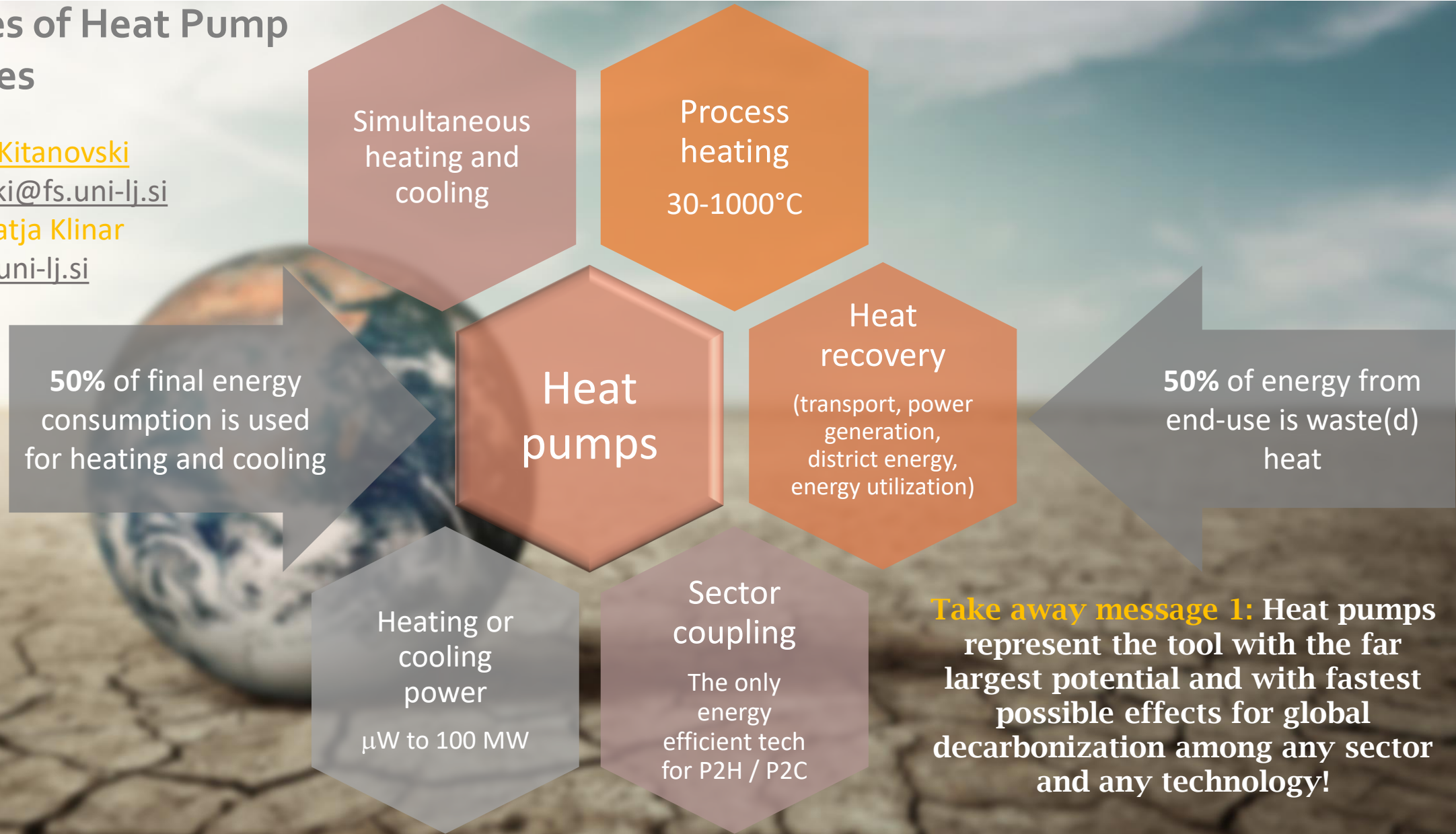
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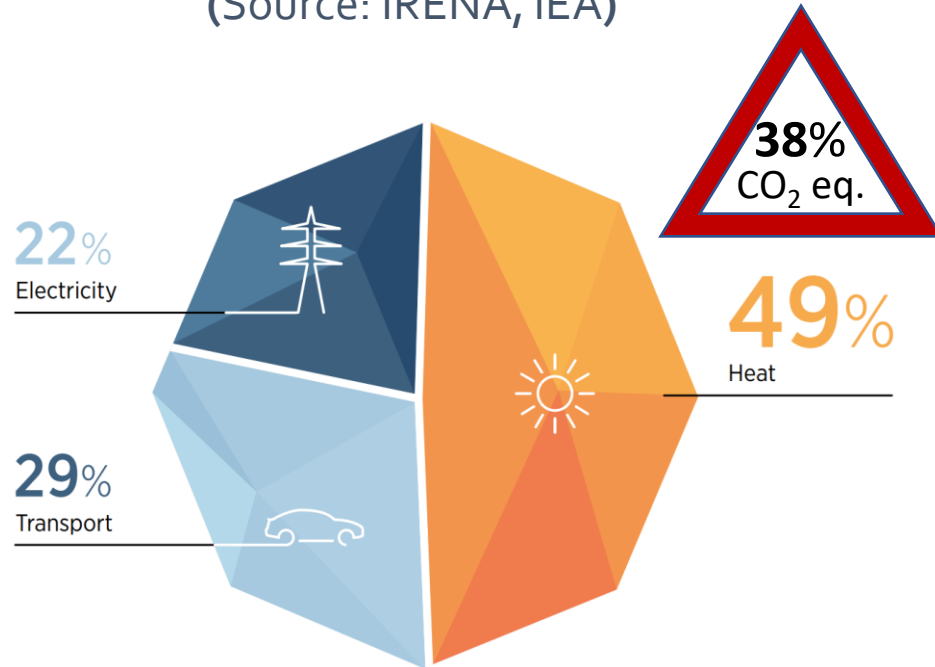
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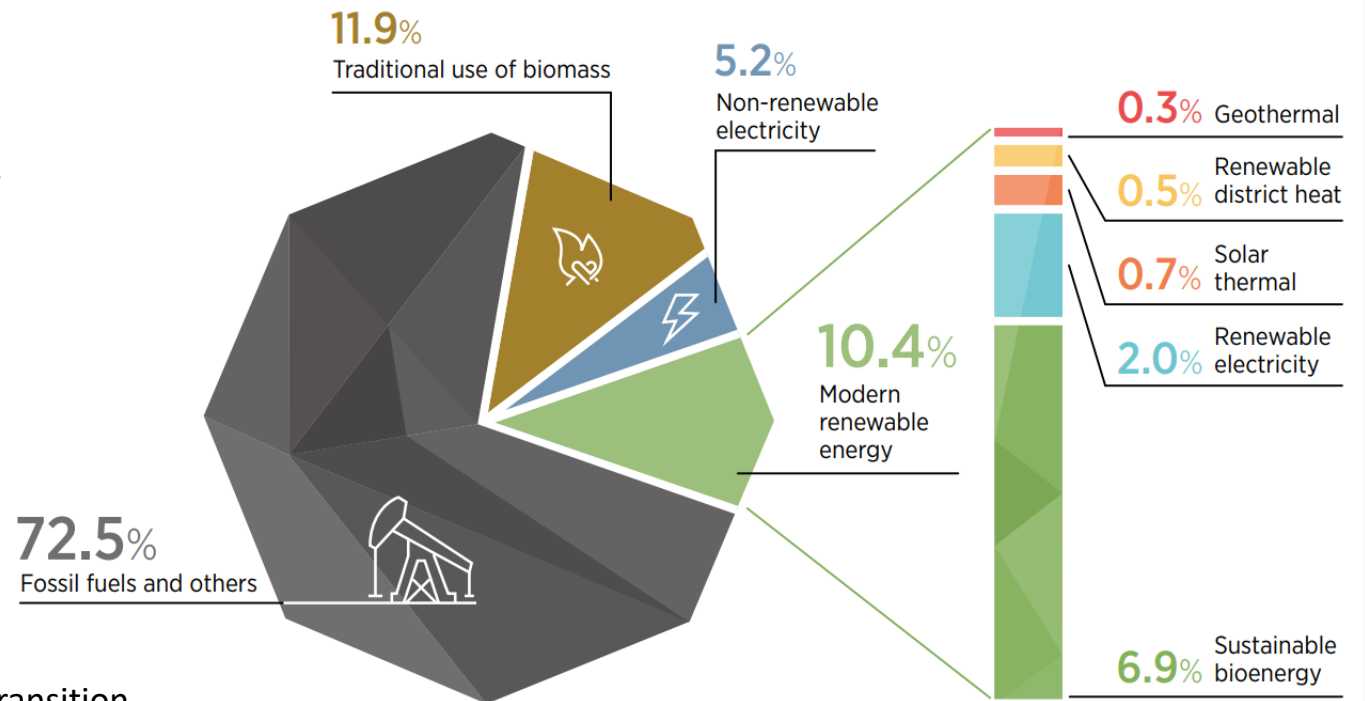
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Total final energy consumption
(Source: IRENA, IEA)



Share of energy sources in total final energy consumption for heating and cooling (Source: IRENA, IEA)



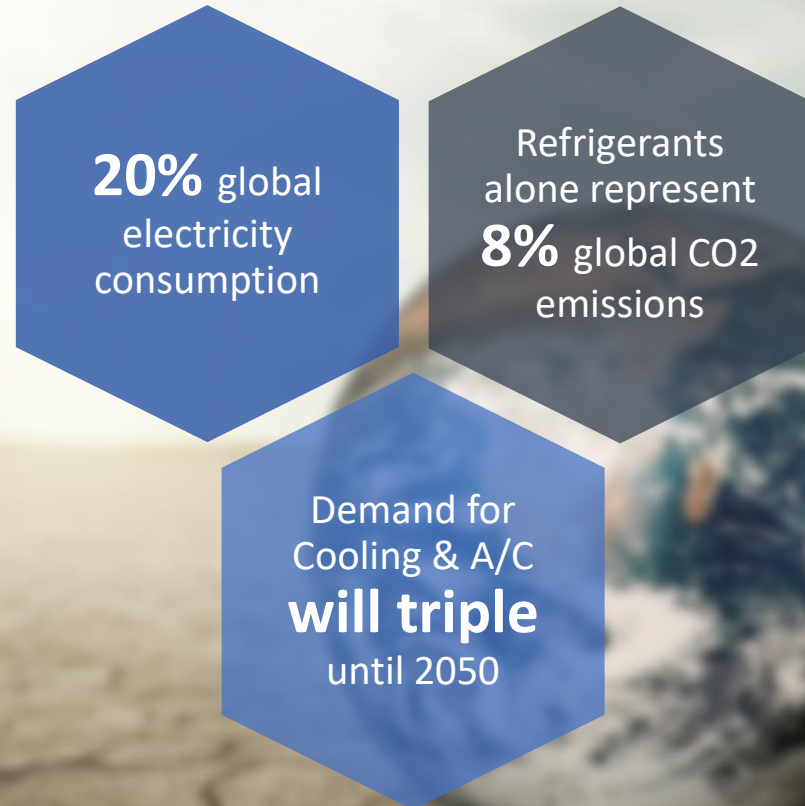
www.iea.org/reports/renewable-energy-policies-in-a-time-of-transition

Take away message2: It is not transport nor power generation. It is heating, cooling, air/conditioning and thermal management which can bring FASTEST & GREATEST contributions to the decarbonization!

Take away message3: 50% decarbonization heating&cooling is more effective than 100 % decarbonization of land transport

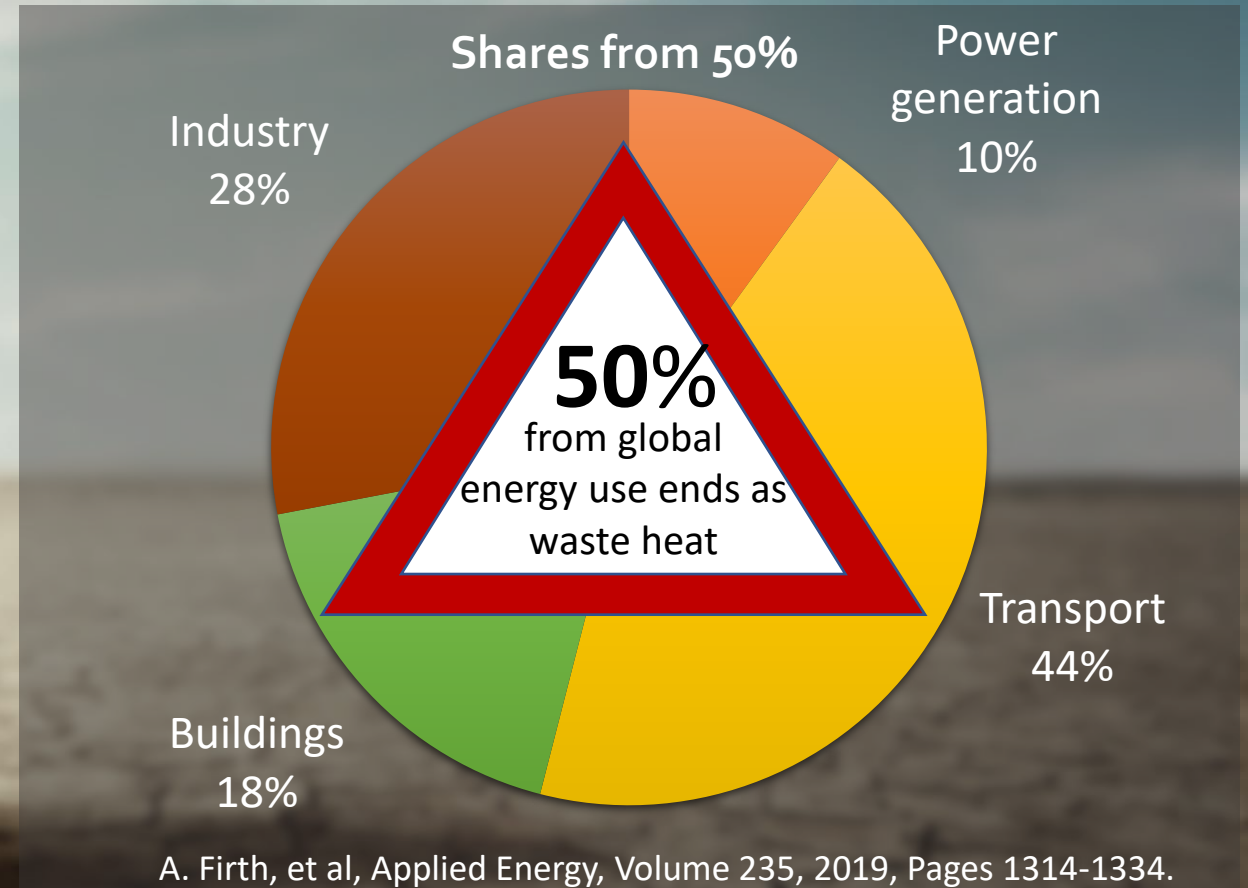
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Are we ready for cooling and air conditioning?



IEA (2018), The Future of Cooling, IEA, Paris
Dupont, JL, IIR, The Role of Refrigeration in the Global Economy (2019), 38th Note on Refrigeration Technologies

We are wasting heat



Take away message 4: Cooling presents 20% of global electricity consumption, which will triple until 2050
Take away message 5: 50% of wasted heat to the environment remains unused and it is thrown away

Heating and Cooling in Deployable Camps

New and emerging solid state and gas-cycle heat pump technologies for heating and cooling can bring substantial contribution to the reduction of global carbon footprint



Take away message 6: New, emerging, environmentally friendly & energy efficient heat pump technologies require and deserve strong support by research programs, and their payback will be better than for other technologies