



MANNVIT

1963 | 50  
2013

# Scalability of Heat Pumps

July 2014

Land and Water Resource Consultants

Trust  
Open-mindedness  
Knowledge  
Well-being

....at a glance

**LWRC**

.... **Where do they start**

.... **Where do they end**

.... **Flow temps and COP's**

.... **UK Potential**

# Kensa Shoebox Heat Pump

**LWRC**

- 1. Designed to be accommodated within small properties**
- 2. Runs independently or on a shared array**
- 3. Delivers  $\sim <3\text{kW}$  @ 0-45 Deg C**
- 4. COP  $\sim 3.4$**



# Calorex 6500

**LWRC**

- 1. Designed for 3 Bed Semi**
- 2. Runs independently or on a shared array**
- 3. Delivers ~6kW @ 0-50 Deg C**
- 4. COP ~ 3**



# Isoenergy Dormers Farm

**LWRC**

- 1. Farmhouse extension and Barn Mini DHN**
- 2. Horizontal array**
- 3. Radiators and underfloor**
- 4. ~21 kW**
- 5. Target COP = 3.5**



# Isoenergy Laxton Hall

**LWRC**

- 1. Large Country Manor**
- 2. Horizontal array**
- 3. Runs on Radiators**
- 4. 170 kW**
- 5. Target COP = 3**



# Magpie Drilling Finsbury Square

**LWRC**

1. Large Central London Office Block
2. Heating and Cooling
3. Borehole array below building
4. 430 kW heat and 150kW cool
5. Target SPF = 5H and 4C



# Magpie Drilling River Island HQ

**LWRC**

1. London Office Block
2. Heating and Cooling
3. Open Loop ~60l/s
4. 1.5MW Heat and Cool
5. Heat and Cool COP >4





# NeatPump Drammen

**LWRC**

- 1. District heat System**
- 2. 13MW heating**
- 3. Sea water**
- 4. 90 Deg C delivery temp**
- 5. £11/MWh**



# Vartan Ropsten Friotherm

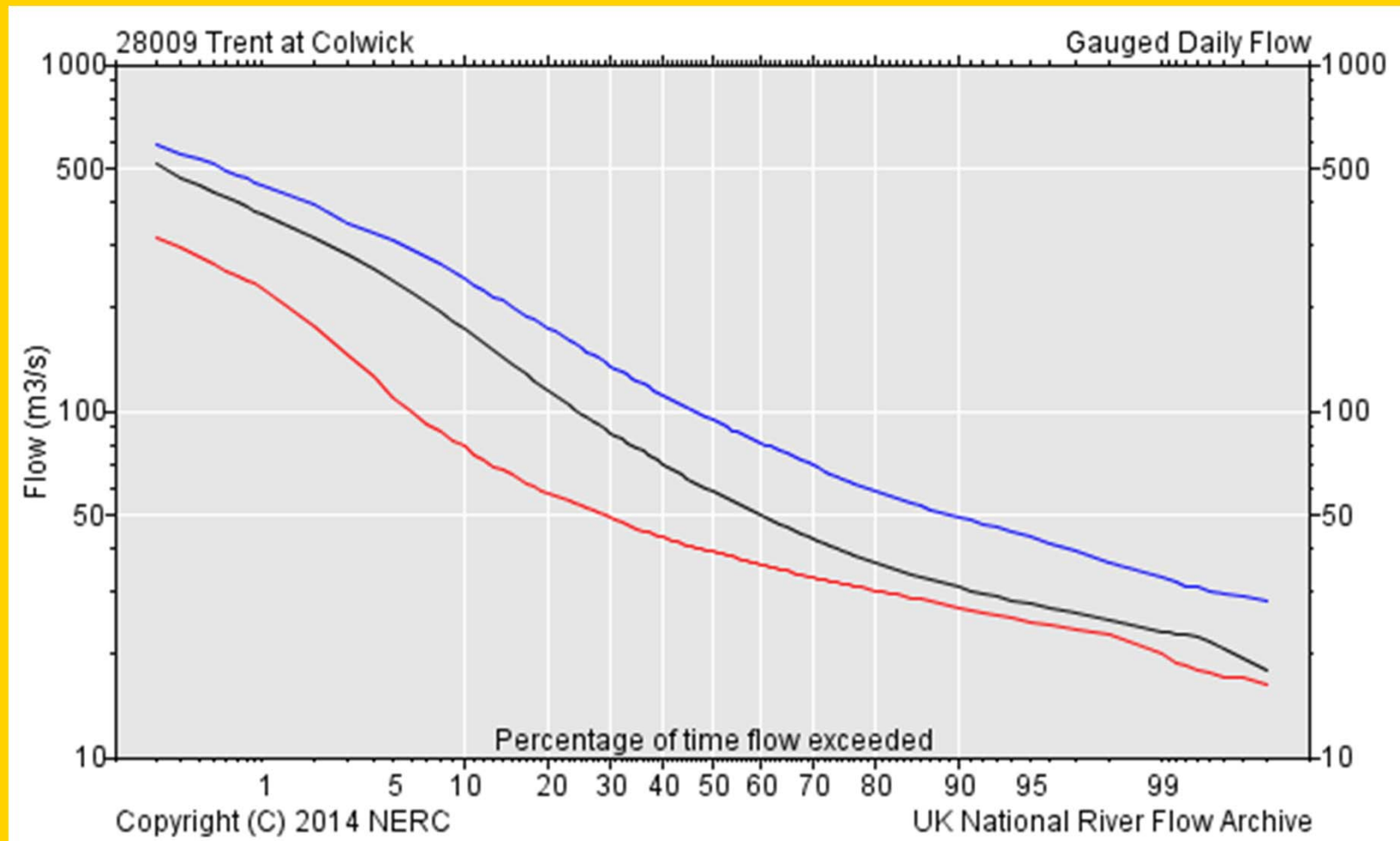
**LWRC**

- 1. District heat System**
- 2. 420MW heating**
- 3. Sea water**
- 4. 80 Deg C delivery temp**
- 5. COP = 3?**



# Can it Happen in the UK?

**LWRC**





**LWRC**

**THANK YOU!**

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Vatnaskil  
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