



Information and demonstration day  
11<sup>th</sup> July 2008



# Agenda

- Energy prices
- Combined Heat & Power (CHP)
- Tri-generation
- Energy supply company (ESCo) model
- CESenergy company update

# The News Today

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'Consumers face big electricity price rises'

'UK electricity prices rise almost 30%'

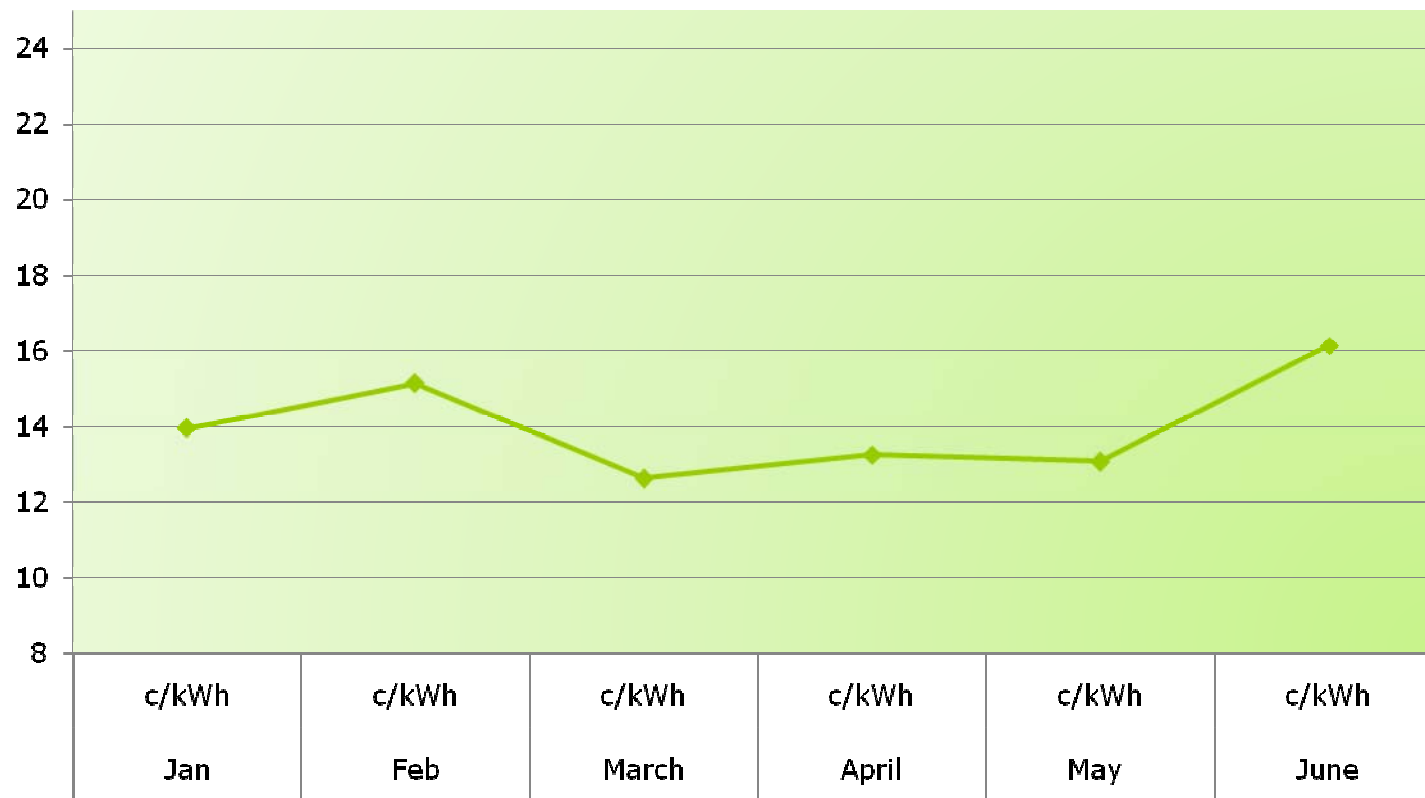
... Irish Times 10<sup>th</sup> July 2008

# Over the past 12 months

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- Oil price increase by 100%
- Gas price increase by 72%
- Coal price increase by 54%

# All Ireland energy market 2008



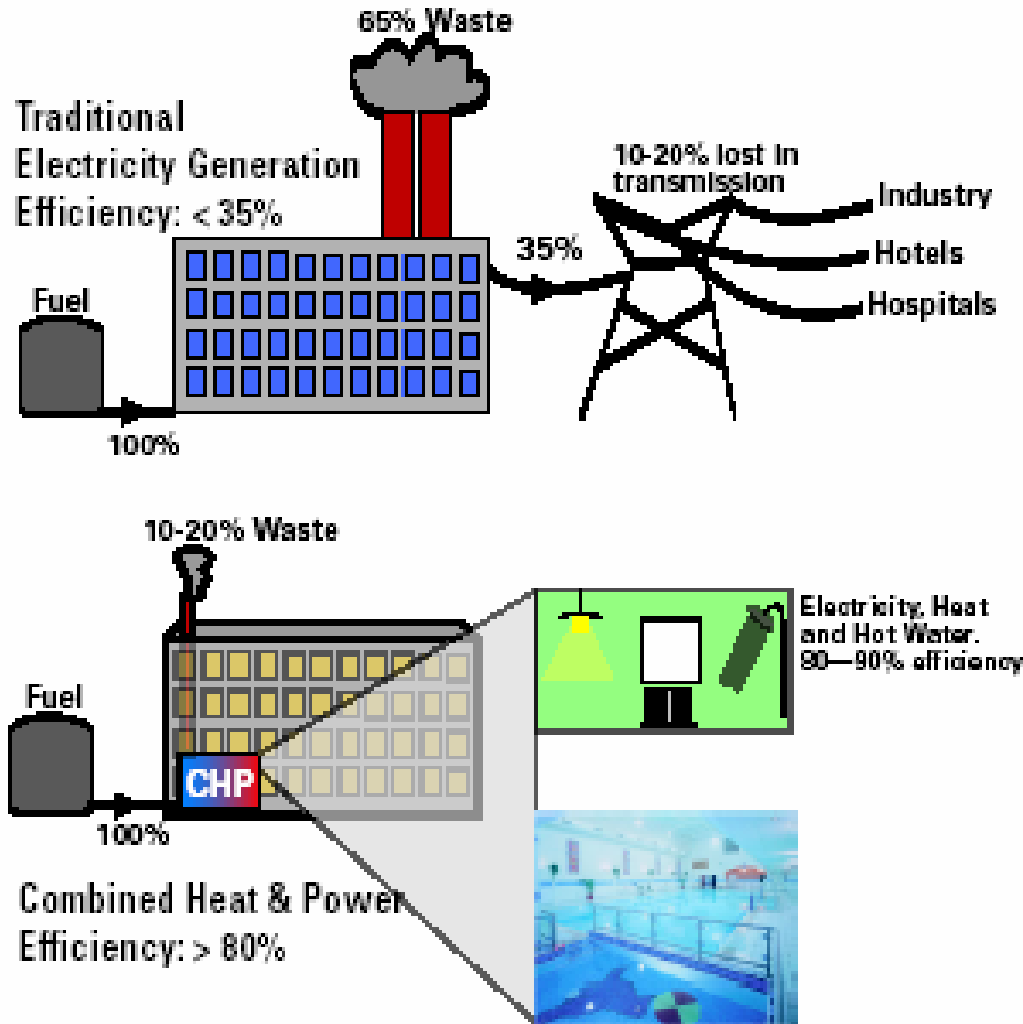
19% increase May 08 to June 08

# What is CHP?

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- ❑ Combined Heat and Power (CHP) is the simultaneous generation of electricity and useful heat in a single process.
- ❑ CHP utilizes the heat produced in electricity generation rather than releasing it wastefully into the atmosphere.

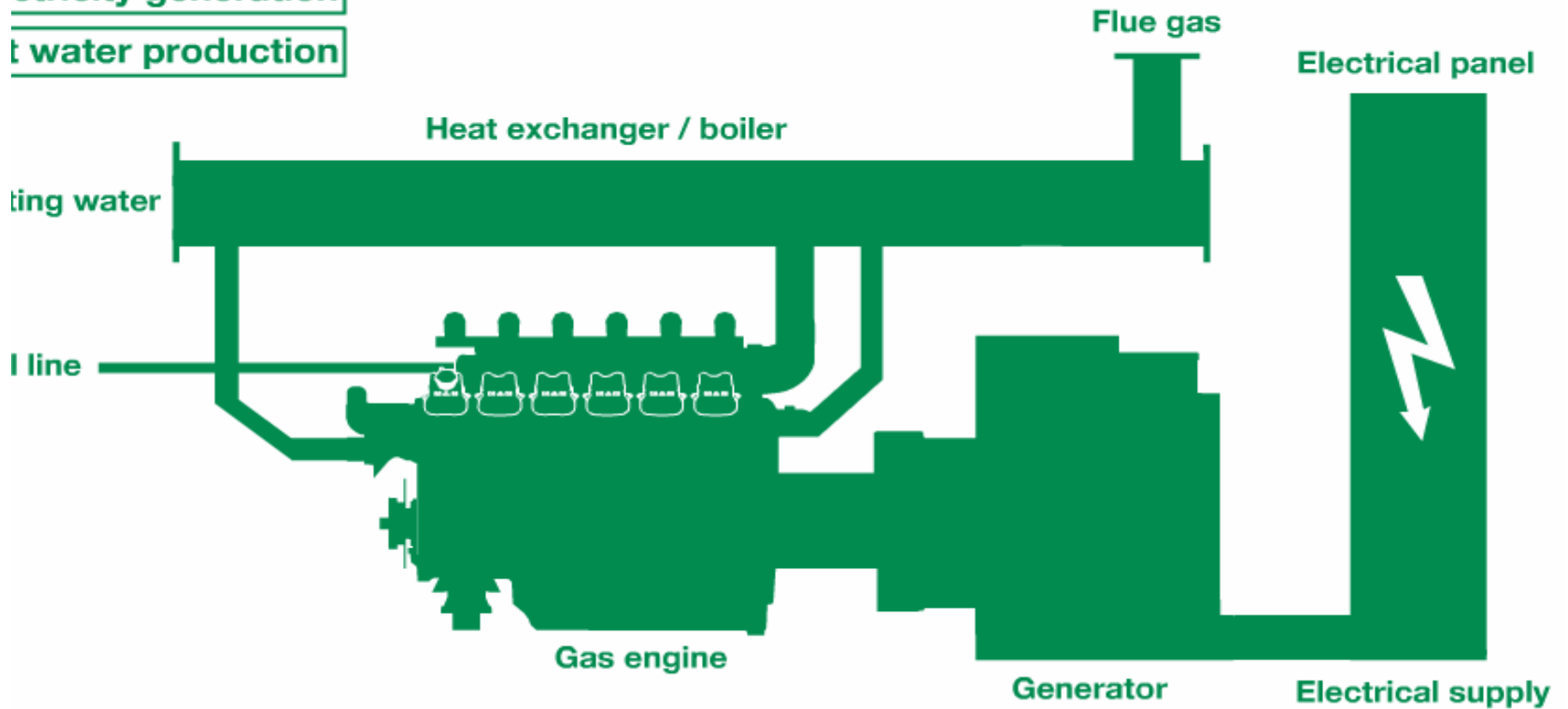
# The CHP Process



# Combined Heat and Power?

Electricity generation

Hot water production



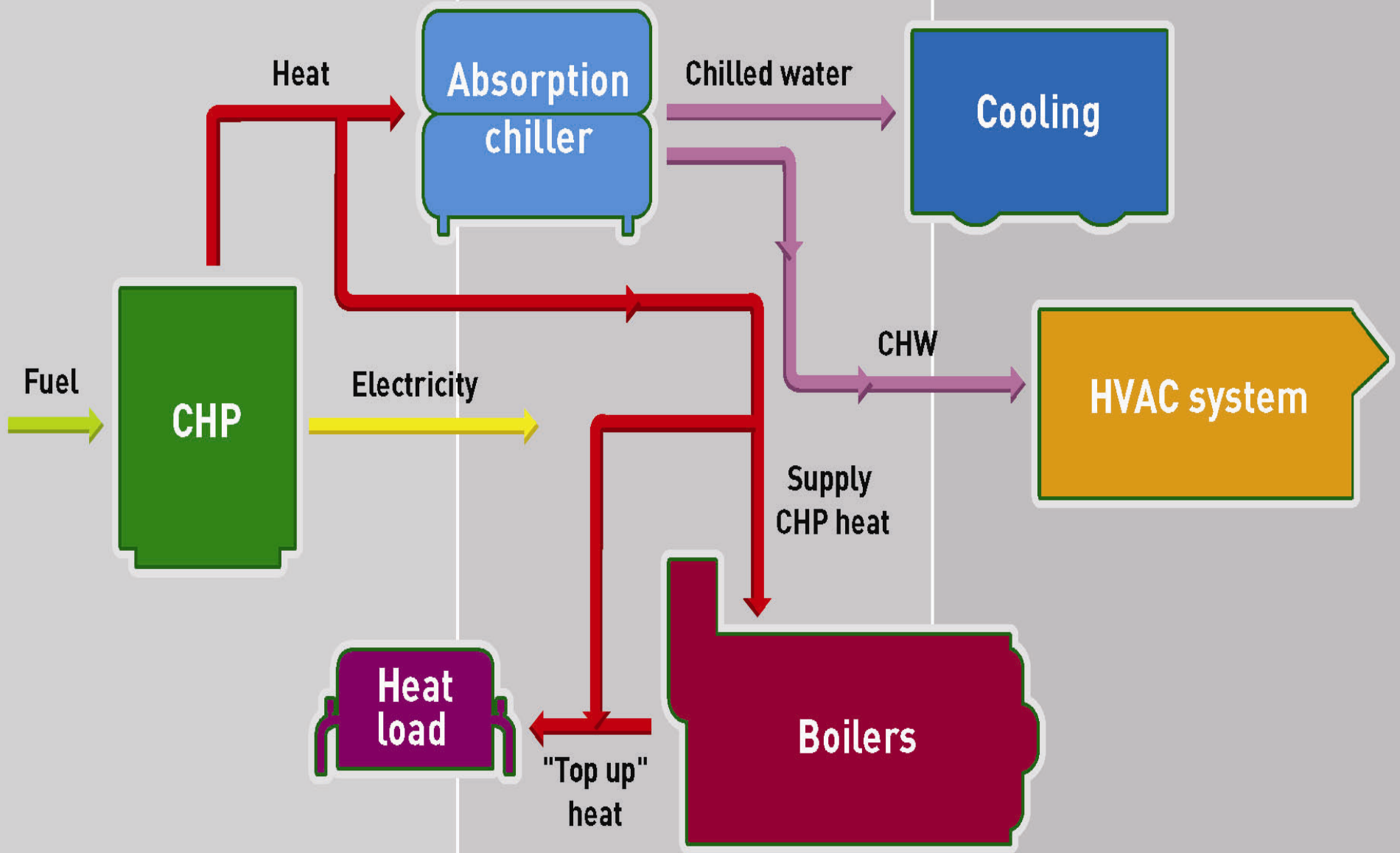
# What is Tri-generation?

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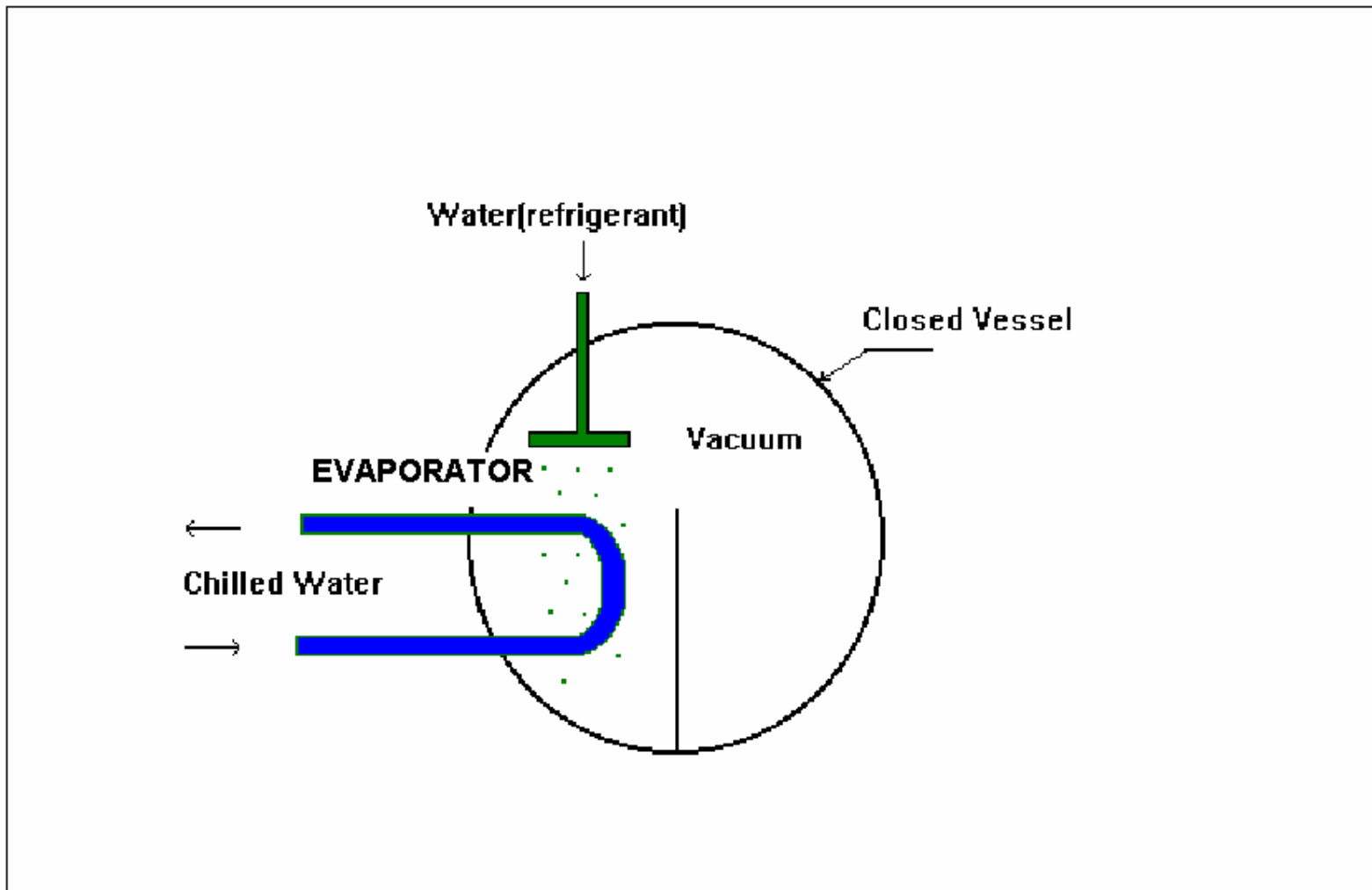
Tri-generation is the simultaneous generation of the three primary energy requirements from one single fuel input.

- Electricity
- Heat
- Cooling

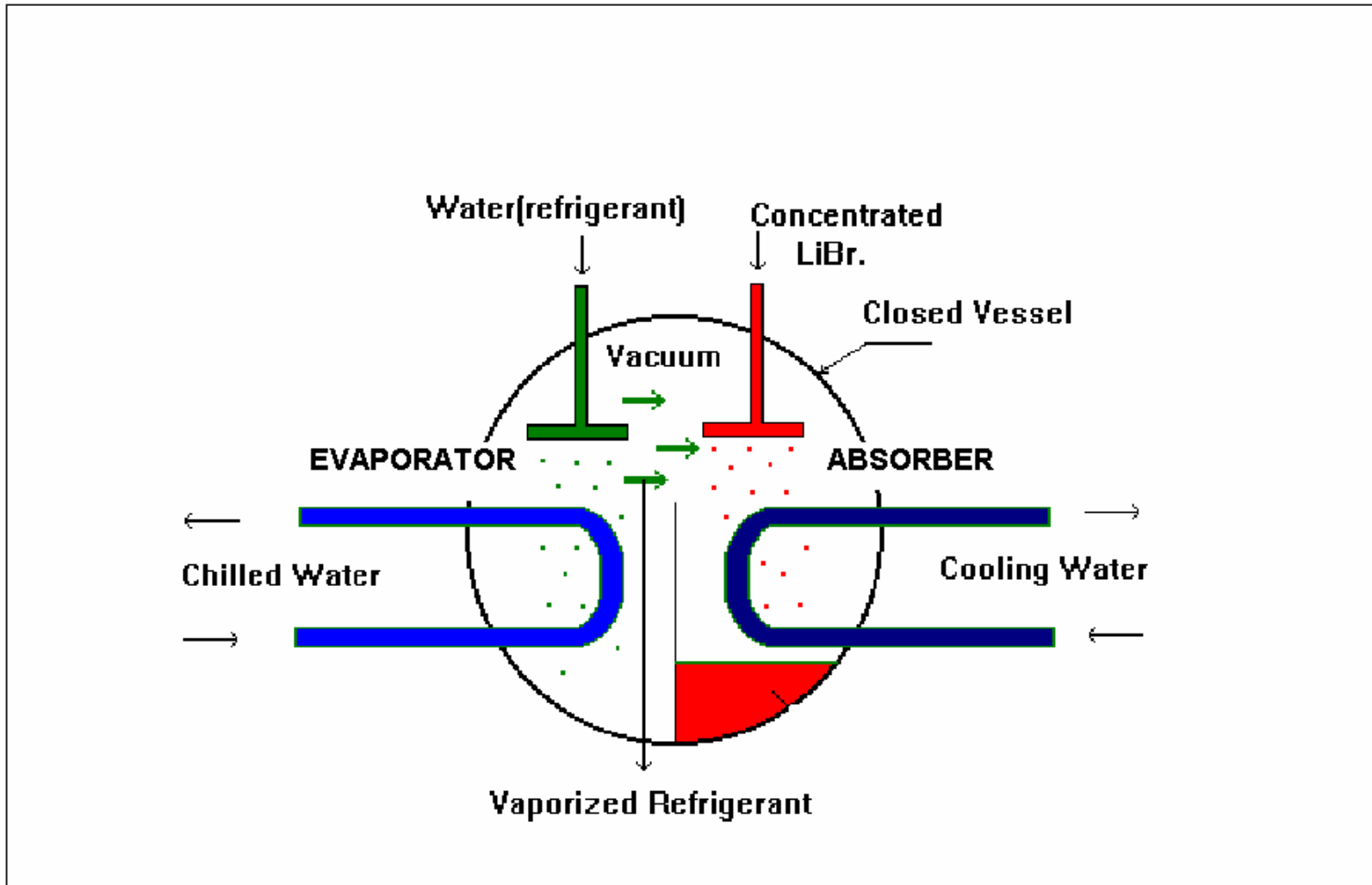
# Trigeneration



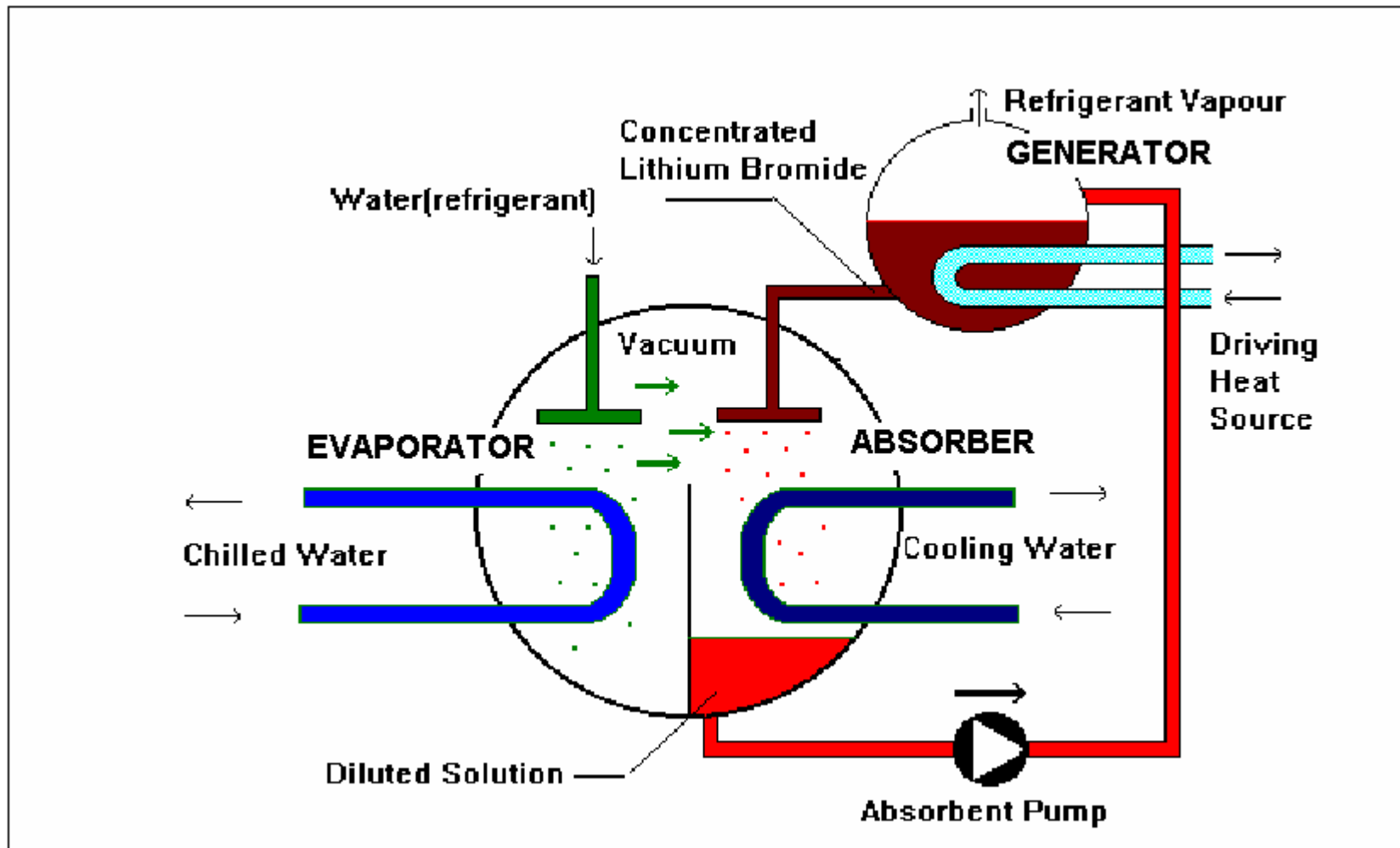
# Working principal



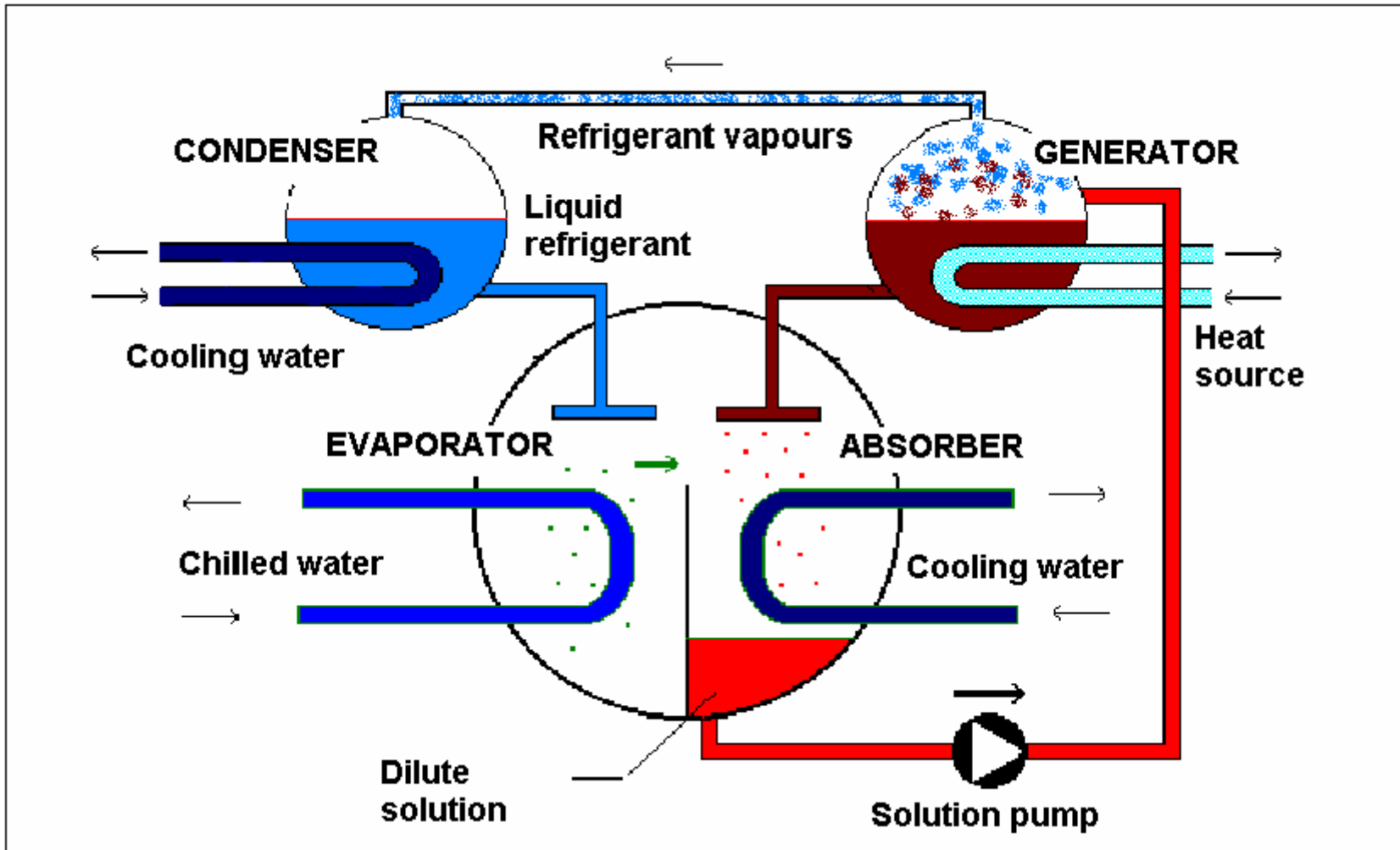
# Working principal



# Working principal

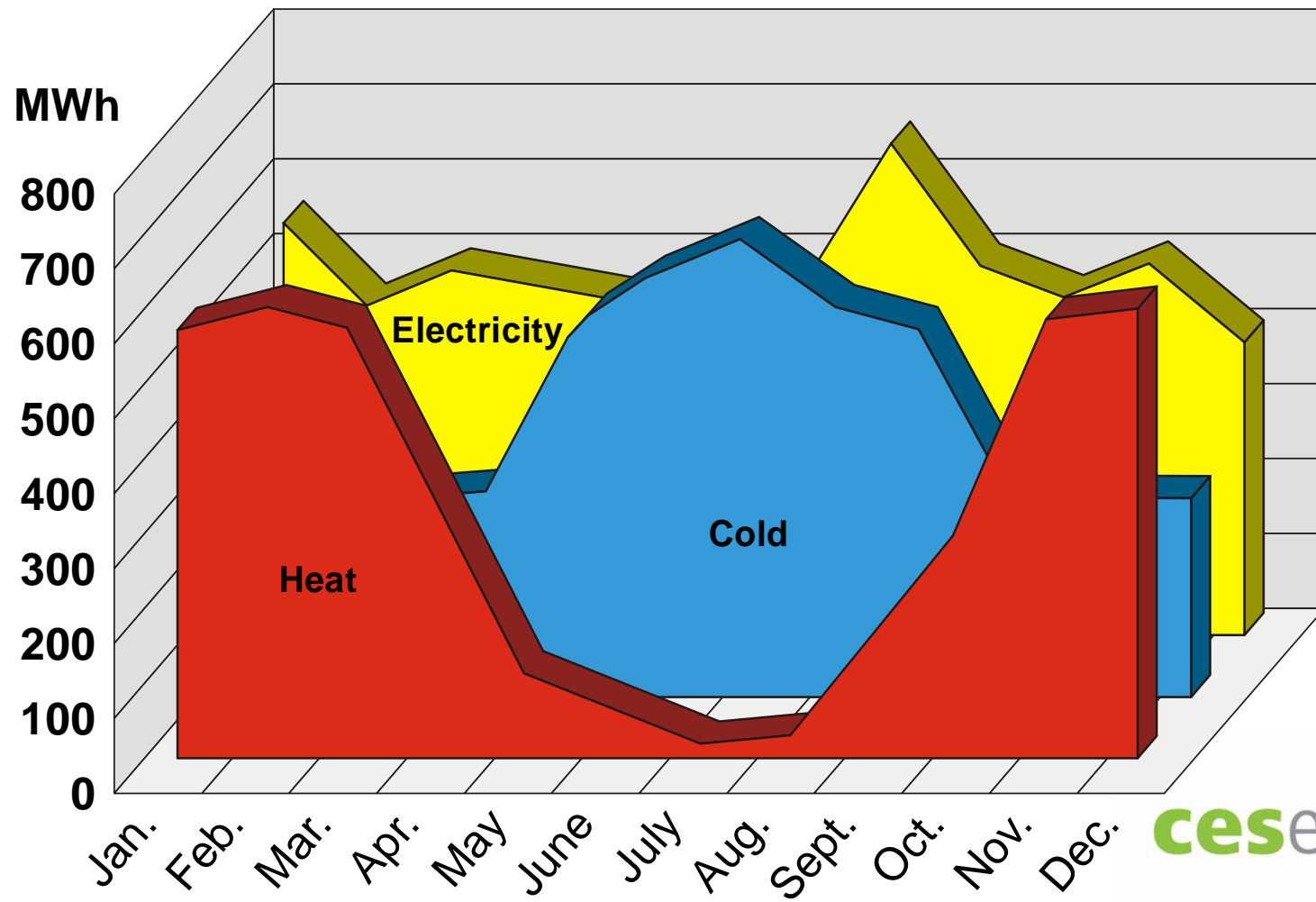


# Working principal



# Why Tri-generation?

Annual Energy Consumption Profile – Office Block Scenario



# When to consider Tri-generation

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- Cooling requirement
  - Air con/HVAC
  - Process
  - Pre-cooling
- Displacement of additional electrical demand
- Increased utilisation of waste heat from CHP plant
- Increased redundancy of primary energy supplies – electrical, thermal, cooling.
- Utilisation of condensing water ie
  - Swimming pool
  - Hot water preheat
  - Process

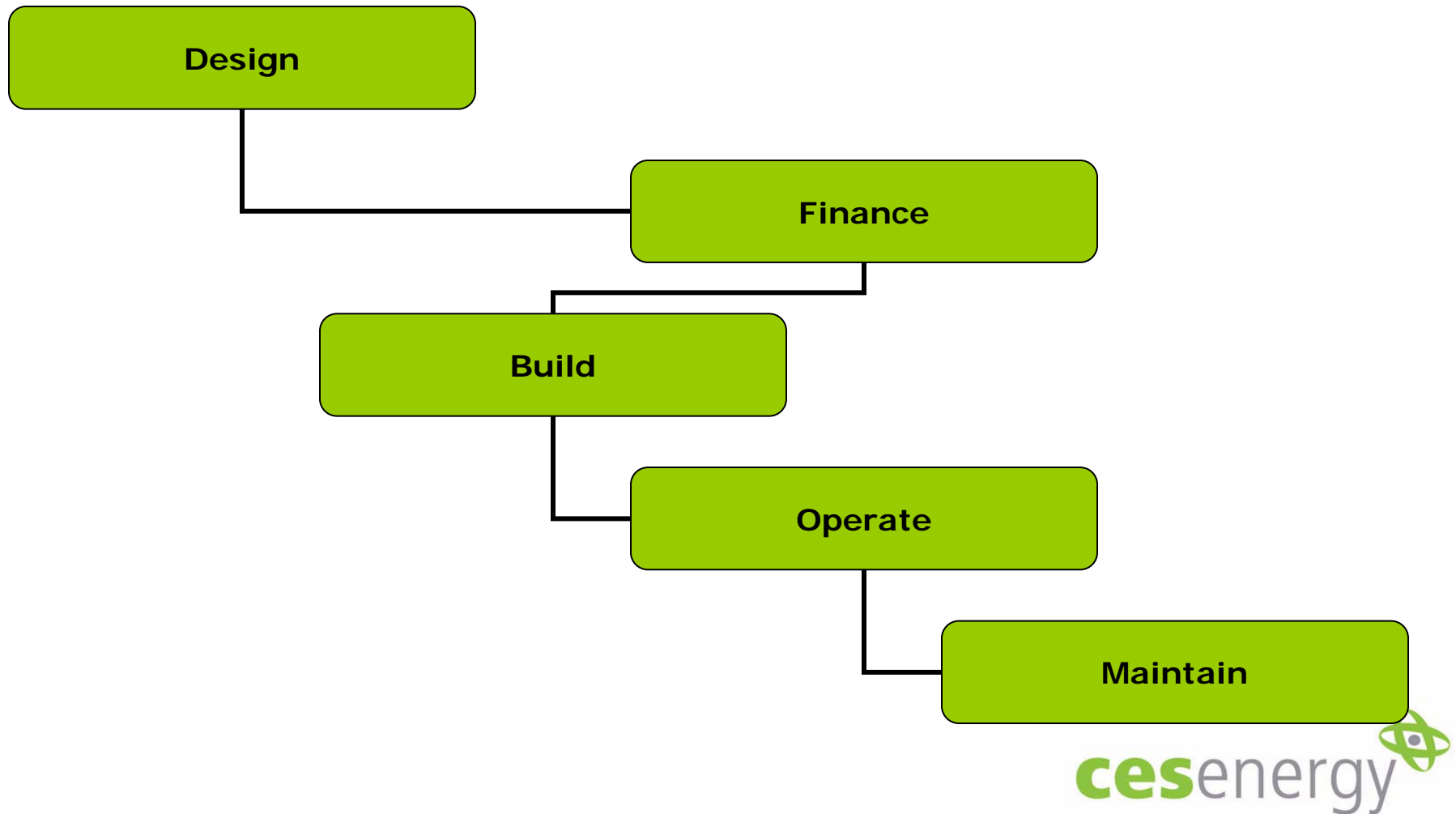
# Keys Market Sectors for CHP/Tri-gen

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- Industrial
- Commercial/retail
- Pharmaceutical
- Finance/IT
- Hospitals
- Hotel Leisure

# Delivery model

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# Energy supply company (ESCo model)

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- ESCo design, build, operate, maintain and finance an on-site energy centre which delivers the lead primary energies (electricity, heating and/or cooling)
- ESCo can provide energy centre and take over the full procurement of all energy requirements
- Customer and ESCo enter a power purchase agreement with agreed pricing
- Customer receives a single monthly bill from ESCo
- Zero or reduced capital spend by customer
- No ongoing maintenance costs for the customer

# Recent CHP announcements

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- ❑ April 2007 - Germany announces plans to double its CHP
- ❑ Oct 07 - Spain new decree on input costs
- ❑ UK – capital enhanced program & climate change levy exemption
- ❑ Ireland SEI - CHP grant program 30% capital grant /40% feasibility study
- ❑ G8 highlights CHP in energy efficiency

# Benefits of CHP & Tri-generation?

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- ❑ Reduced electricity costs and demand
- ❑ Reduced heating costs
- ❑ Reduced cooling cost
- ❑ Reduce CO2 emission
- ❑ In-line with company environmental policy
- ❑ Security of supply
- ❑ Positions your building now for the future standard ie. higher rating building will attract higher rent and blue chip tenant

# Our Mission Statement

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“To engineer better energy solutions giving substantial financial saving and reducing CO2 emission”

- *CHP*
- *TRI-Generation*
- *District Heating/cooling*
- *Renewables*

# Group activity



Tom Marren MD CESEnergy  
finalist of 2008 Ernest &  
Young Entrepreneur awards

Customer including:  
AIB, Citigroup, A & L  
Goodbody, Hilton

Current jobs:  
Stratford, Watford,  
Croyden,  
Wembly, Illford

Appointed to Energy  
centre for 453,300sq.m  
Multi-development in  
Belguim (18mW)

Prague office planned  
opening  
Q4 08 – 15mW multi-  
development

Offices in Sydney and  
Melbourne.  
45MW in retail and  
commercial building  
including 101 Miller St &  
Blackmores HQ



# Why CESenergy?

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- ❑ **Specialist in CHP, Tri-generation and DH solutions-** team of experienced and qualified engineers
- ❑ **Complete in house installation**
- ❑ **CESenergy control** – maintenance, management, 24/365
- ❑ **Experienced Project management** –design, build, operate and maintain
- ❑ **Complete turnkey solution**
- ❑ **Flexible finance solutions** – ESCo and D/M models

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# THANK YOU

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