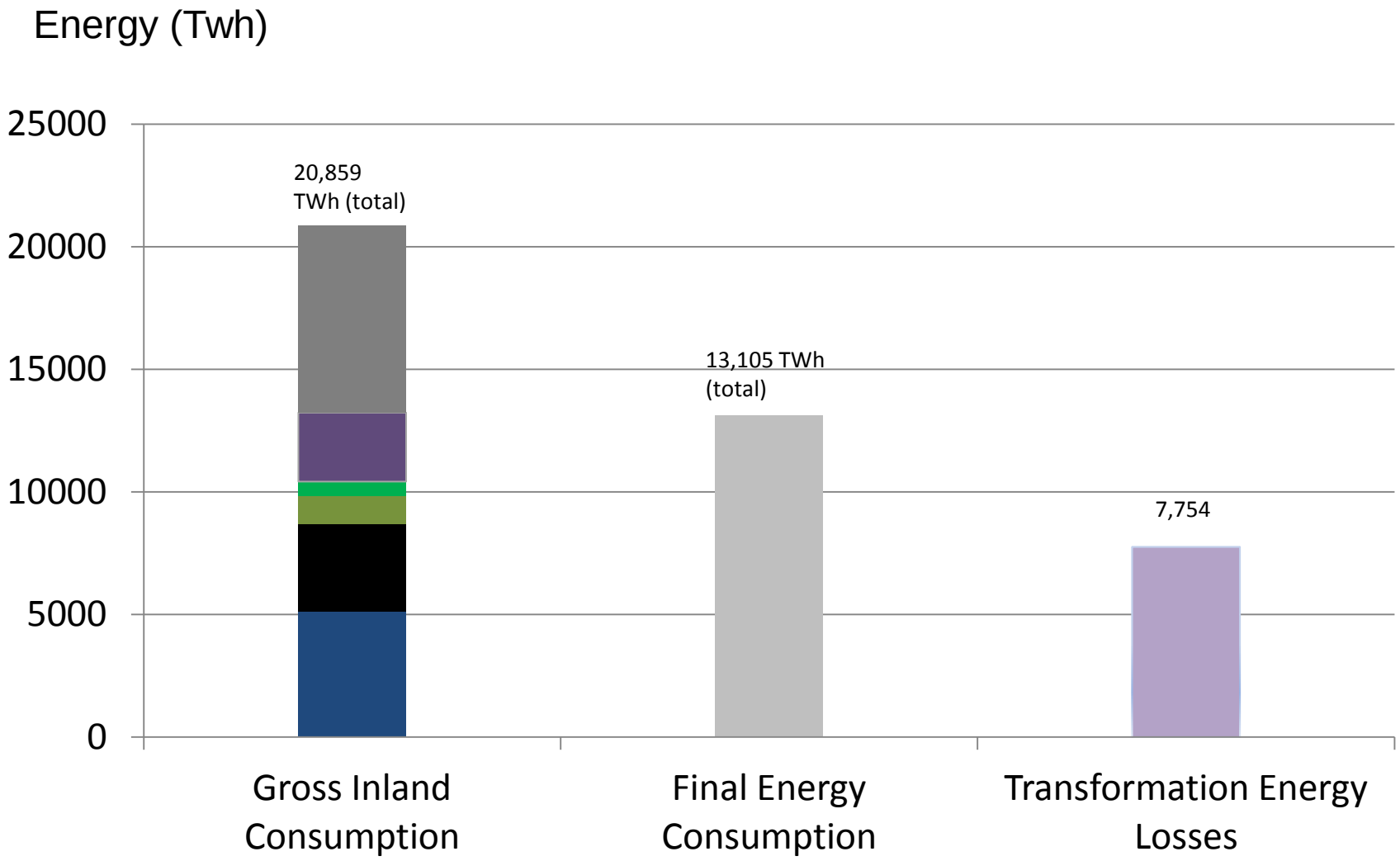
COGEN
europe

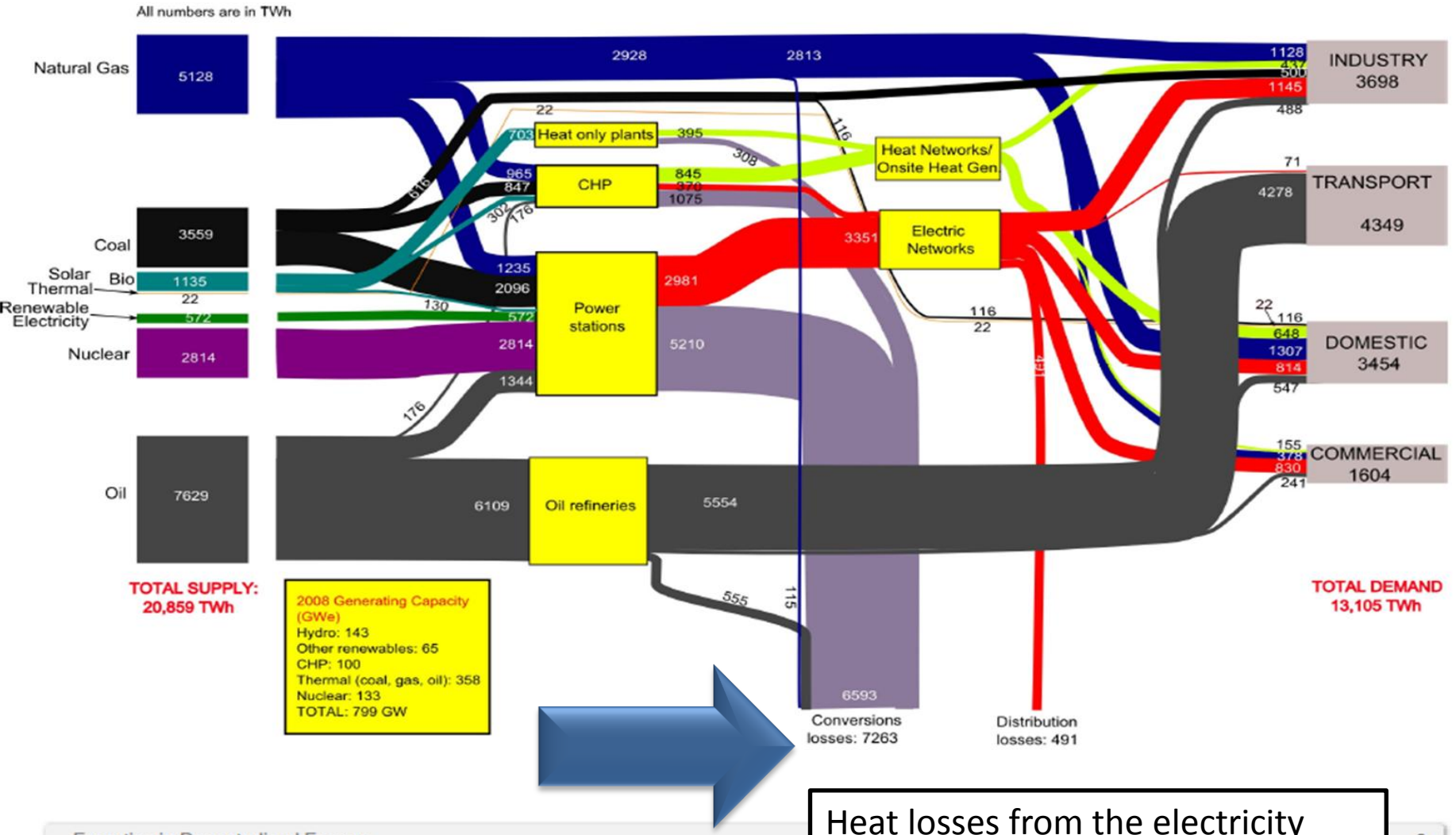
Changing the way
Europe provides heat and electricity
for a sustainable future

2008 Losses in energy transformation



2008 Energy Supply and Demand in Europe

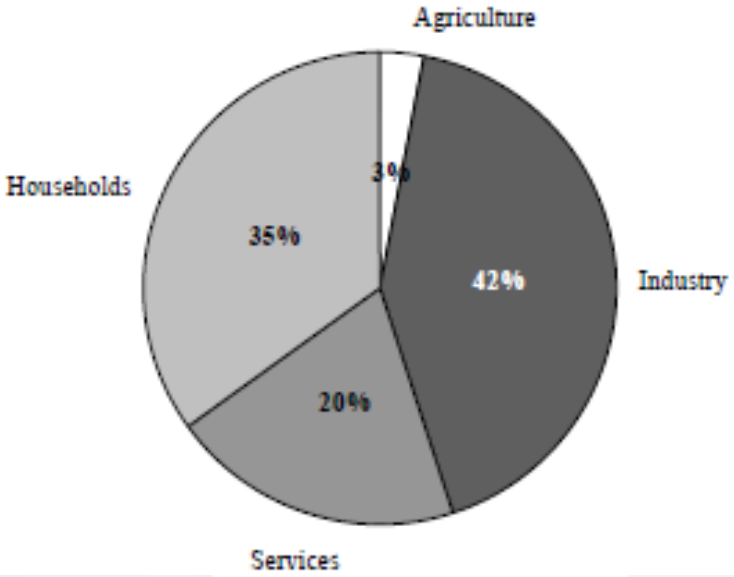
DELTA Energy & Environment



Heat losses from the electricity sector are greater than heat demand in all sectors

Heat in Europe (taken from member states own reports)

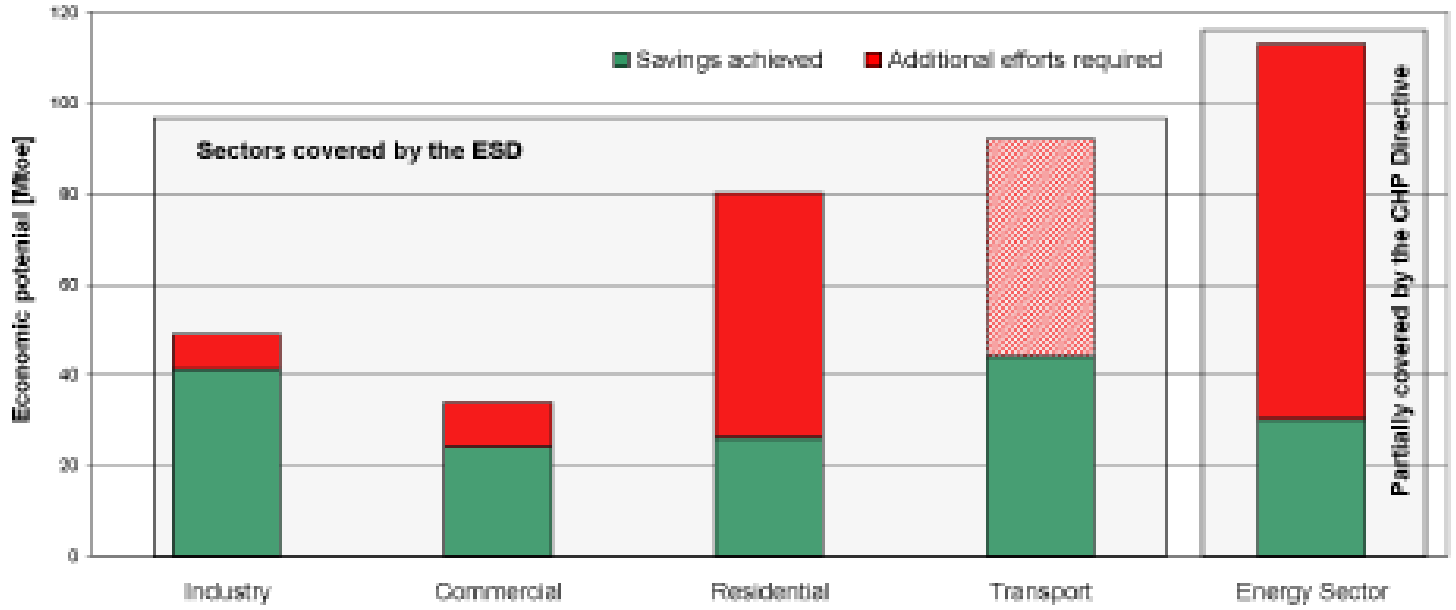
The EU total thermal energy demand consumes 60% of the primary energy resources, and accounts for 46% of its final energy use.



Heat split by sector

Expected improvements and progress to 2010 in energy efficiency target : IA of EED

Figure 1: Expected improvements in 2020 and need for additional effort per sector[18]



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Difficulties for developing an energy efficiency vision in the transformation sector today

- Traditional supply models prevail so separate supply thinking dominates.
- Policy makers focus on electricity rather than planning for complete energy supply.
- Infrastructure not consistently addressed.
- Energy efficiency in EU policy is an end use domain. Transformation losses, linked to gross inland consumption are not part of the energy efficiency debate.
- Untested assumption that ETS will drive energy efficiency in the transformation sector.
- Lack of transparency and lack of reporting combined with traditional structure makes access to information difficult (and limited to a few).

What policies are driving EE improvements

- Many **diverse players with** different drivers but broadly the sector does not see itself as having a need to improve its efficiency it will tell you that it is as efficient as possible.
- Traditional Utilities: only commercial competitive pressure focused on" a better mouse trap approach" minor improvements in generation efficiency. Capital cost and fuel cost dominate the market. **The role of ETS is not proven.** The large number of generation options, depreciated plants.subsidies and barriers to alternatives, which exist plus the elasticity of electricity demand mean that ETS is not going to drive short and near term change. (however change is pending and capacity has a long life)
- **Standards and regulations** work for this sector
- **Targets and obligations** also work.
- Distribution/Transmission : No policy focus but **Eco Product Design** will have some impact eventually
- Weak language included in **3rd liberalization package/ future obligation in EED may have an effect.**
- Integrated/distributed supply efficiency: CHP directive, set standard but lacked force as no compulsion to act, now replaced by **weak EED.**
- **RES**..replacing fossil in primary energy use.
- For Gas network /oil/coal/ : **Standards and regulations**

Transformation sector no current energy efficiency vision ?

- Heat has no energy efficiency objectives and no plan.
- Fuel supply has not energy efficiency objectives and no plan?
- Electricity has no energy efficiency vision
  - major elements such as transmission and distribution efficiency are not addressed
  - major efficiencies from integrating different supplies (waste heat to homes, CHP, new heat networks, RES) are not or not clearly addressed
  - distributed generation has many barriers remaining
  - cross-cutting opportunities like growth of ESCOs a more integrated approach or a more distributed energy supply/generation approach are difficult to include in the currently favoured central supply model
  - The carbon vision introduces confusion in mobilizing the energy efficiency agenda as carbon reduction and energy efficiency are assumed to be the same.

Transformation sector EE vision 2050

- The opportunities along the supply chain to **2020 :110mtoe.**

Priority Action 3

Making power generation and distribution more efficient

The Commission will by 2008 develop minimum binding efficiency requirements for new electricity, heating and cooling capacity lower than 20 MW[28] and consider, if necessary, such requirements for larger production units. It will also develop with the energy supply industry guidelines on good operating practices for existing capacity to raise average generation efficiency for all plants and agree guidelines on good regulatory practices to reduce transmission and distribution losses. A proposal for a new regulatory framework to promote the connection of decentralised generation will be put forward in 2007.

- The opportunity to **2050**
  - Requirements on new infrastructure (electricity, gas,heat)
  - EU Planning and requirements addressing integrated supply of heat and electricity (waste heat, heat networks, CHP)
  - Distributed Generation (Local production and generation)
  - BAT for new generating plant/requirement to replace.

Setting a vision and back casting for the transformation sector.

1. Develop a detailed description of the **energy** savings required from the transformation sector (assumed in current plans) to meet the 2050 energy roadmap (or other).
2. Re-assess and develop **the hierarchy of actions** for different parts of the transformation sector based on the opportunity, value for money and sustainability of the savings, considering all options.
3. Based on 1) and the options developed in 2) allocate to the transformation sector a set of objectives for **phased efficiency improvements** to 2050 based on its relative effectiveness compared to other sectors to achieving the 2050 objectives.

Pivotal: Improved energy efficiency is a goal in its own right.

- Energy Efficiency and Savings provide significant contributions to all three pillars of Sustainable Development (environmental, economic, and social).
- The acquired experience on encouraging energy efficiency and energy savings indicates a need for well developed targeted policies and measures in order fund and stimulate the desired behaviour.
- The energy and climate goals set must be complementary and comprehensive

Pivotal:Primary or end use energy savings

- Primary energy efficiency/savings objectives and end use energy savings/efficiency objective …we need both…
- For the transformation sector the measure has to be primary energy savings.

Target setting for Energy Efficiency and Savings

- *Overall Energy Savings Targets:* is the result of the combination of the savings potentials in the main sectors of the economy concerned (buildings, transport, industry, and energy transformation)
- *Burden sharing:* a transparent “internal burden sharing” between these sectors of the economy will allow to address possible policy overlaps;
- *Competitiveness* The targets themselves and the measures taken to achieve those targets must be applied in such a way as to maintain and develop the sustainability and competitiveness of the European Economy trading in a global market.
- *Society Energy* efficiency policy should result in the lowest sustainable cost for energy at any time.