



Die Berater der Energie- und Wasserwirtschaft




Load Management – how it is put into practice and which potentials exist at the moment?

Contribution to the Berlin Seminar on Energy and Climate Policy

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DIW, Berlin, 10th December 2014

BET is a specialist for the German energy markets. With 25 years of market experience BET is a leading consultancy for the players in the energy business.



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» At five branch offices almost 80 engineers, industrial engineers and economists take care of our customers concerns. «

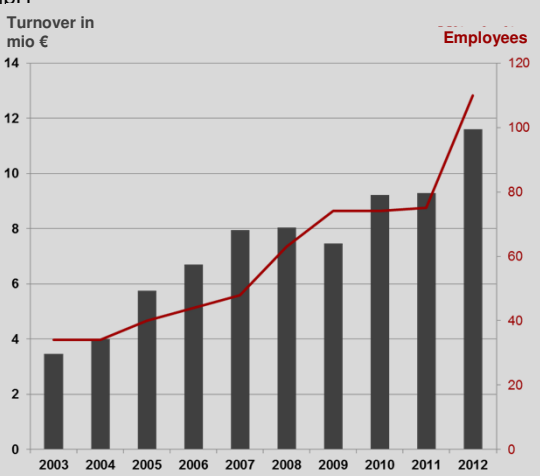
1988: Establishment of BET GmbH

1995: Development of an Electricity Grid Access Ordinance (Netzzugangsverordnung Strom)


1999-2003: Consultancy for the development of Association Agreements, Electricity Grid Access and EnWG

Since 2007: Transaction support for multiple big deals in the energy economy (Steag, Amprion, OGE etc.)


Since 2012: Assistance to the BMU for the realisation of the German Energy Concept



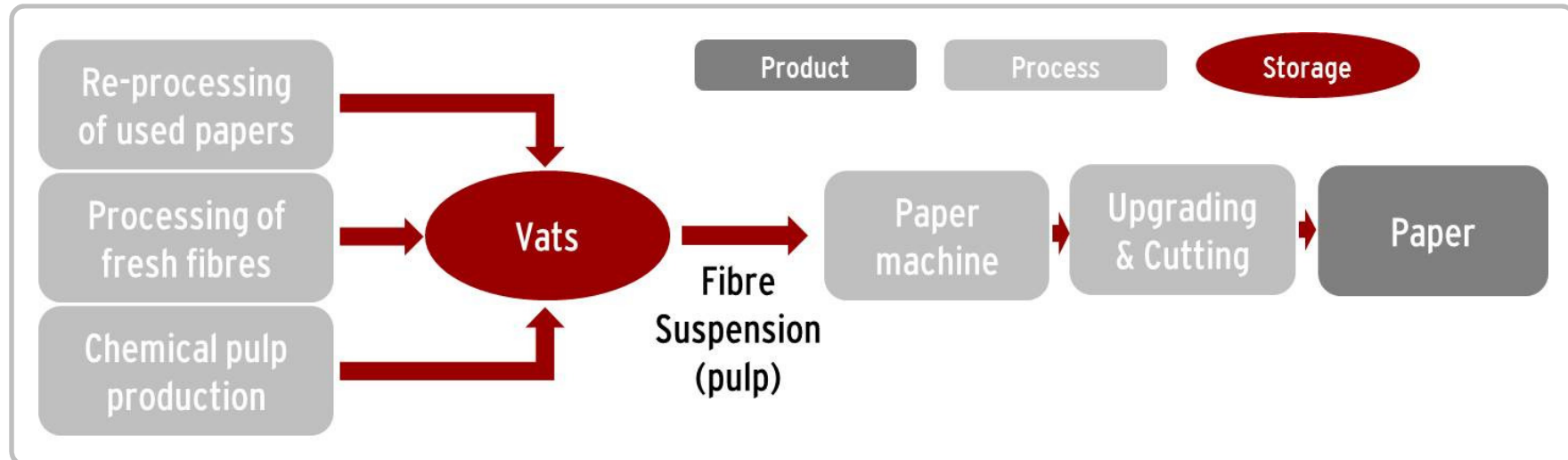
Year	Turnover in mio €	Employees
2003	3.5	35
2004	4.0	38
2005	5.5	45
2006	6.5	50
2007	7.5	55
2008	8.0	60
2009	7.5	65
2010	9.0	70
2011	9.0	75
2012	11.5	110



» We do not only wish to attend to our customers immediate concerns, but also to enhance and secure their competitiveness through transfer of knowledge. «

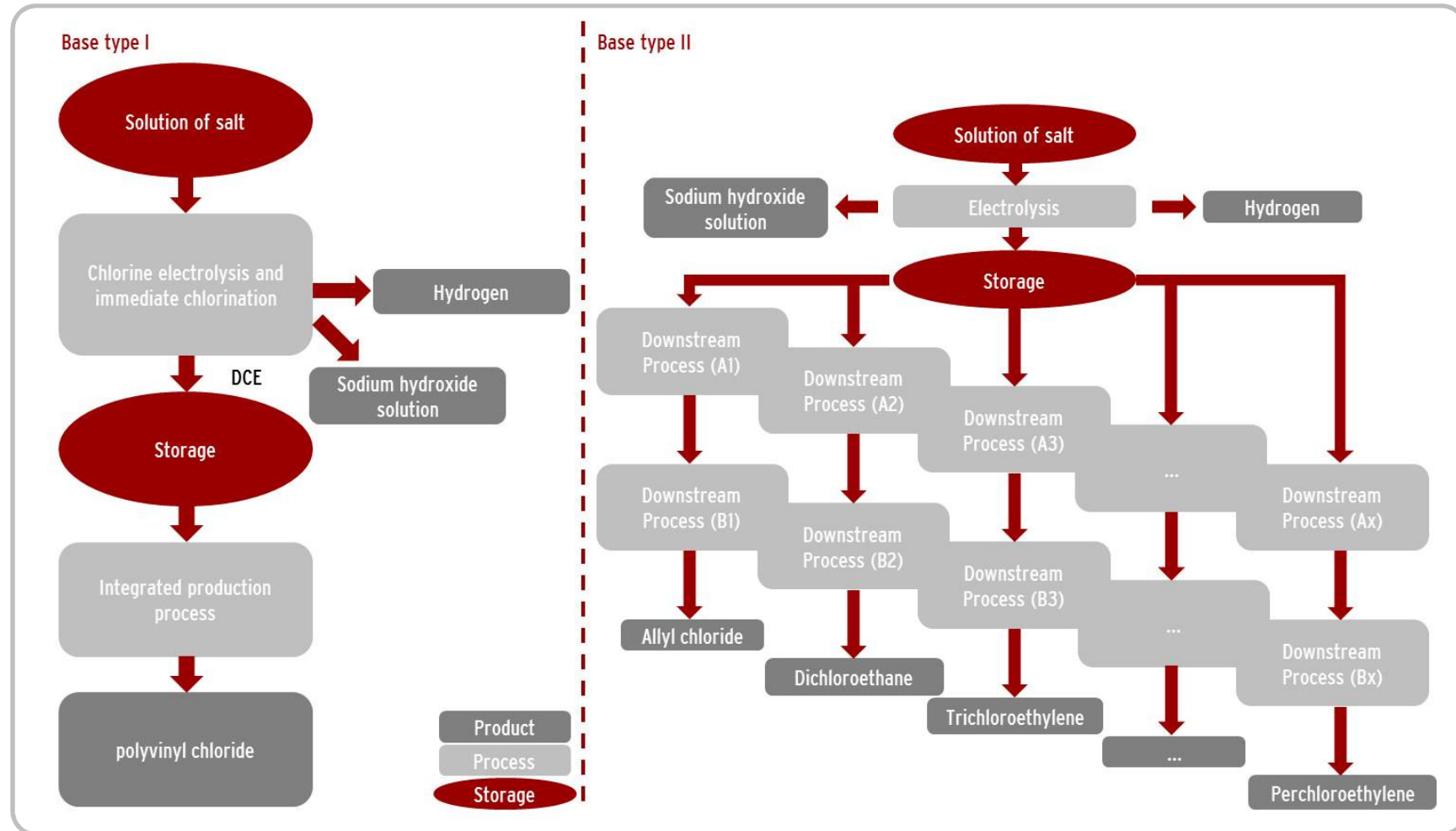


BET and Trianel on behalf of UBA have interviewed companies in order to find out how to put load management into practice – Example: the paper industry

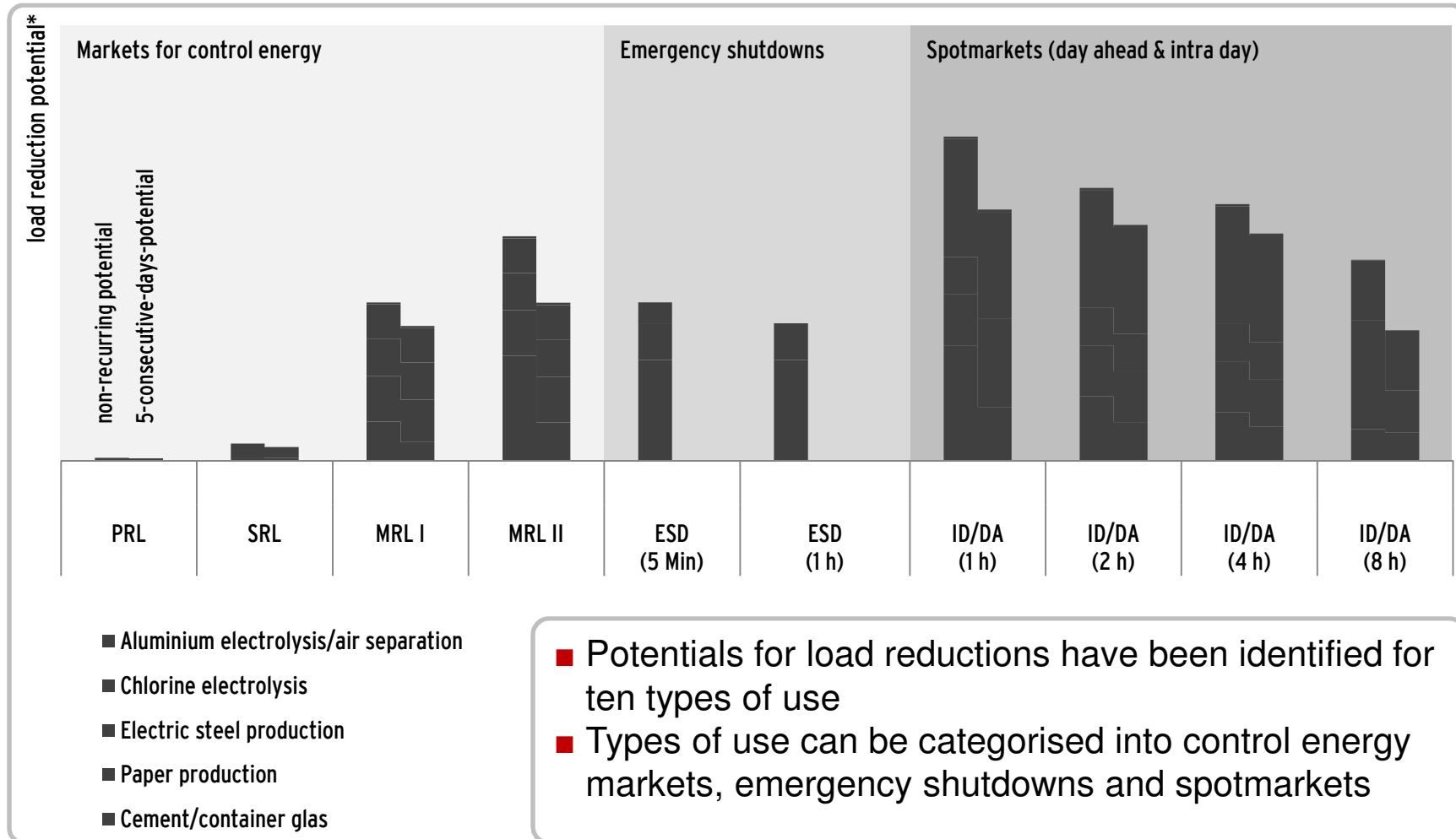


- There is often more than one way to implement load changes.
- **Re-processing of used papers** and **processing of fresh fibers** offer the highest potential for load reductions as well as for load increases. Most vats are big enough to provide fibre suspension for 12 – 24h of production of the paper machine.
- The **paper machine** offers low potential due to the low installed capacity and the high degree of capacity utilisation.

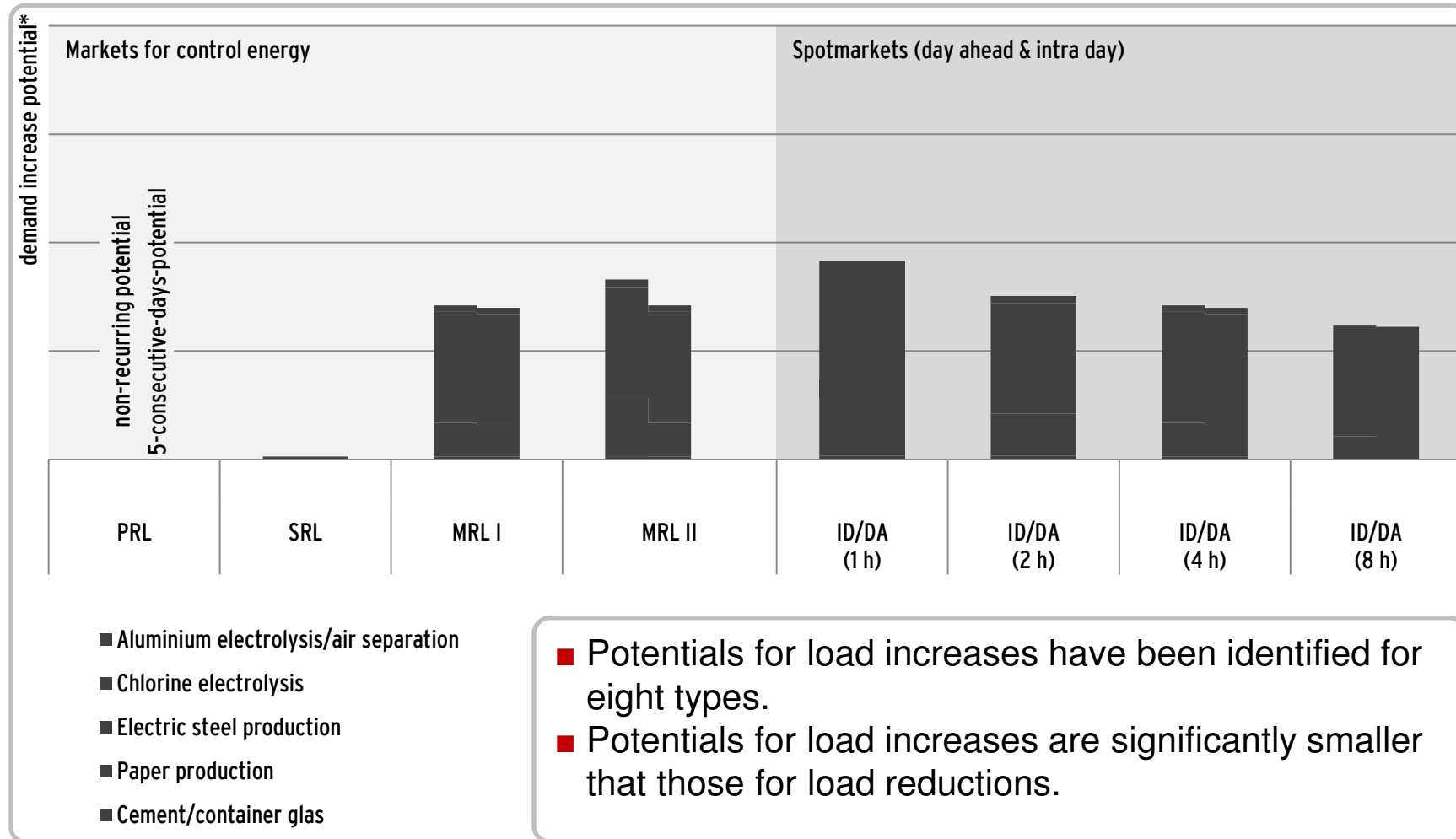
Another example how to put load management into practice is the case of the chlorine electrolysis. Here two different base types exist.



After extensive evaluation of the data collected in our survey BET and Trianel calculated potentials for load reductions for ten different types of use...



.. while for load increases only eight different types of use have been defined

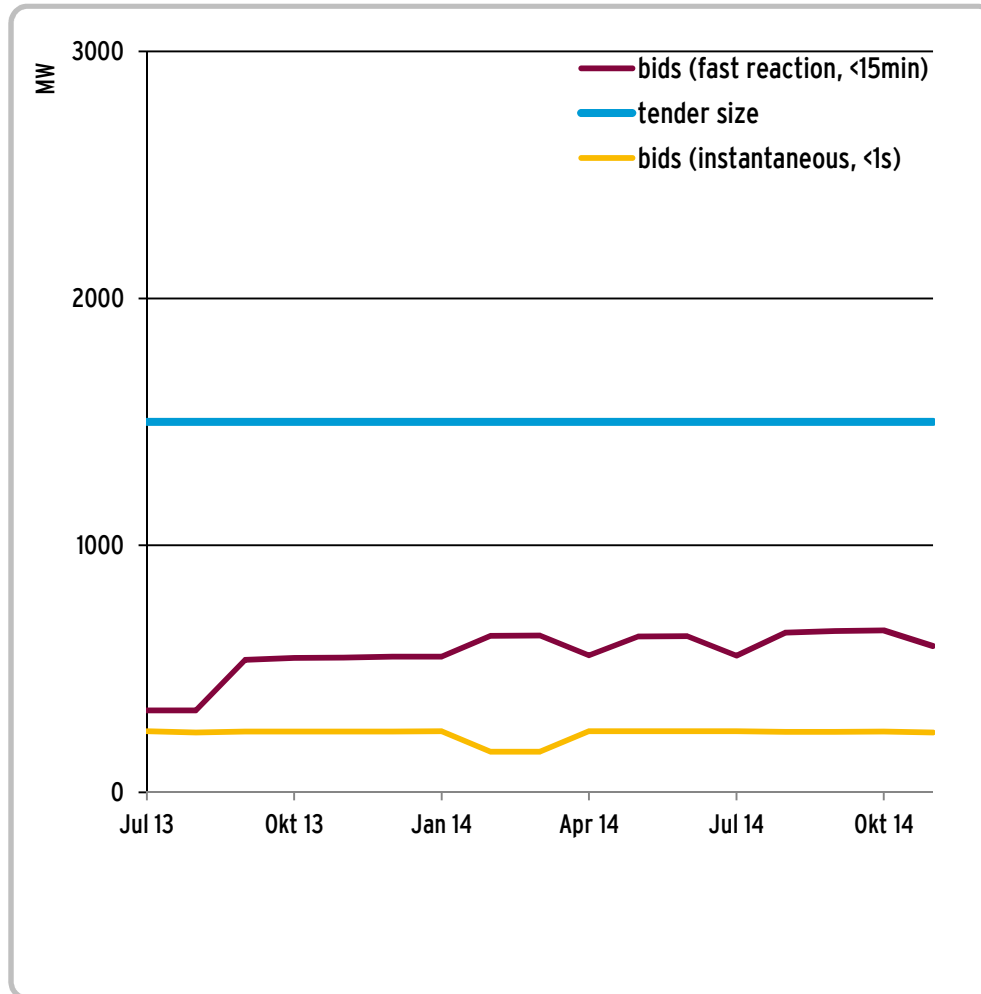


Load management can be a significant part of the total supply on markets for control energy. This holds particularly true for tertiary reserve (MRL).

*The diagram contained key information and had to be removed**

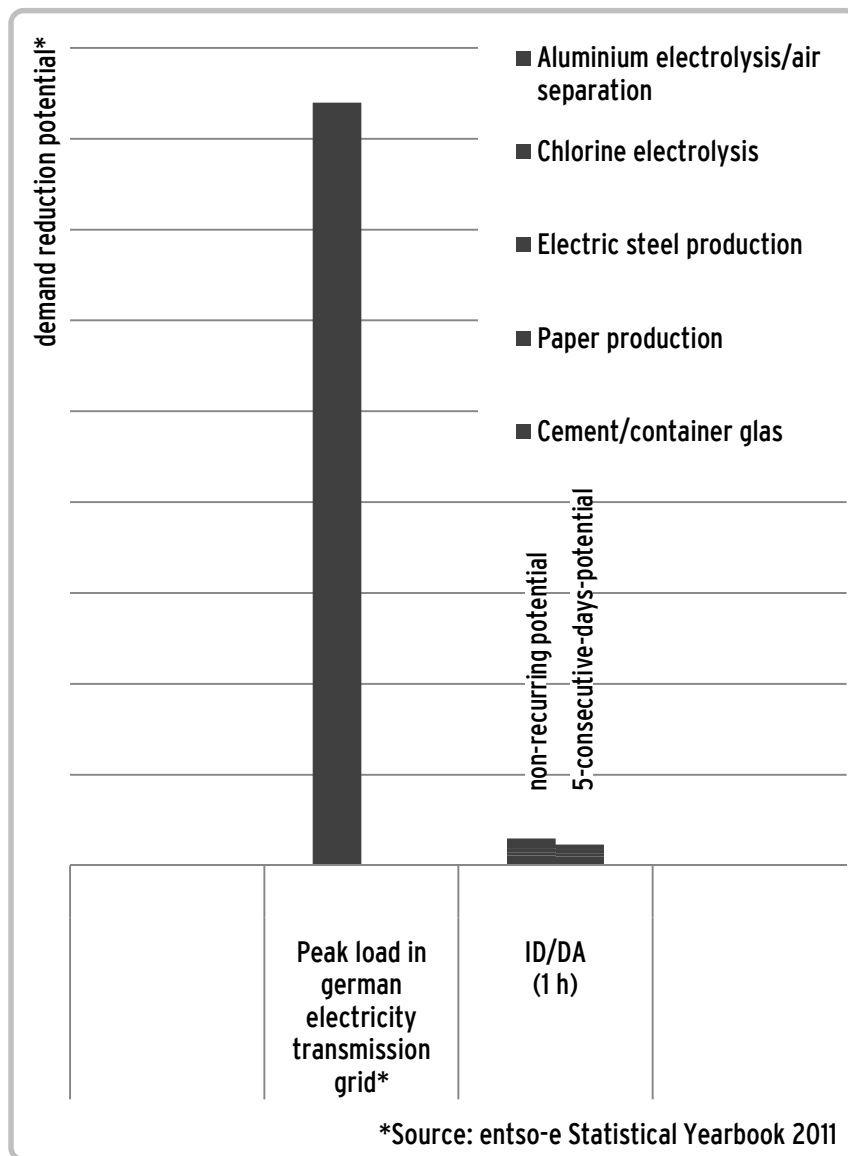
- The potential in the type of use *positive MRL I* equals more than half of the market volume. The potential in the type of use *MRL II* equals almost 80% of the market volume.
- Compared to market volume, only the potential in type of use *positive MRL* is large. In addition considerable potentials exist in *negative SRL* and *negative MRL*.

Ordinance on interruptible loads (AbschaltVO) has created a reserve for emergency shutdowns & a system stability reserve. Participation is low.



- AbschaltVO foresees two tenders for load reductions, each 1.500 MW tender size*.
- Bidding on energy payments for load reductions; successful bidders receive 2.500 €/MW/Month capacity payment in addition.
- In both segments tender size has not been reached despite substantial potential revenues.
- Comparison with potentials in use types *MRL I* and *MRL II* as well as *Emergency Shutdowns (5 Min & 1 h)* shows there is room for improvement with regard to participation

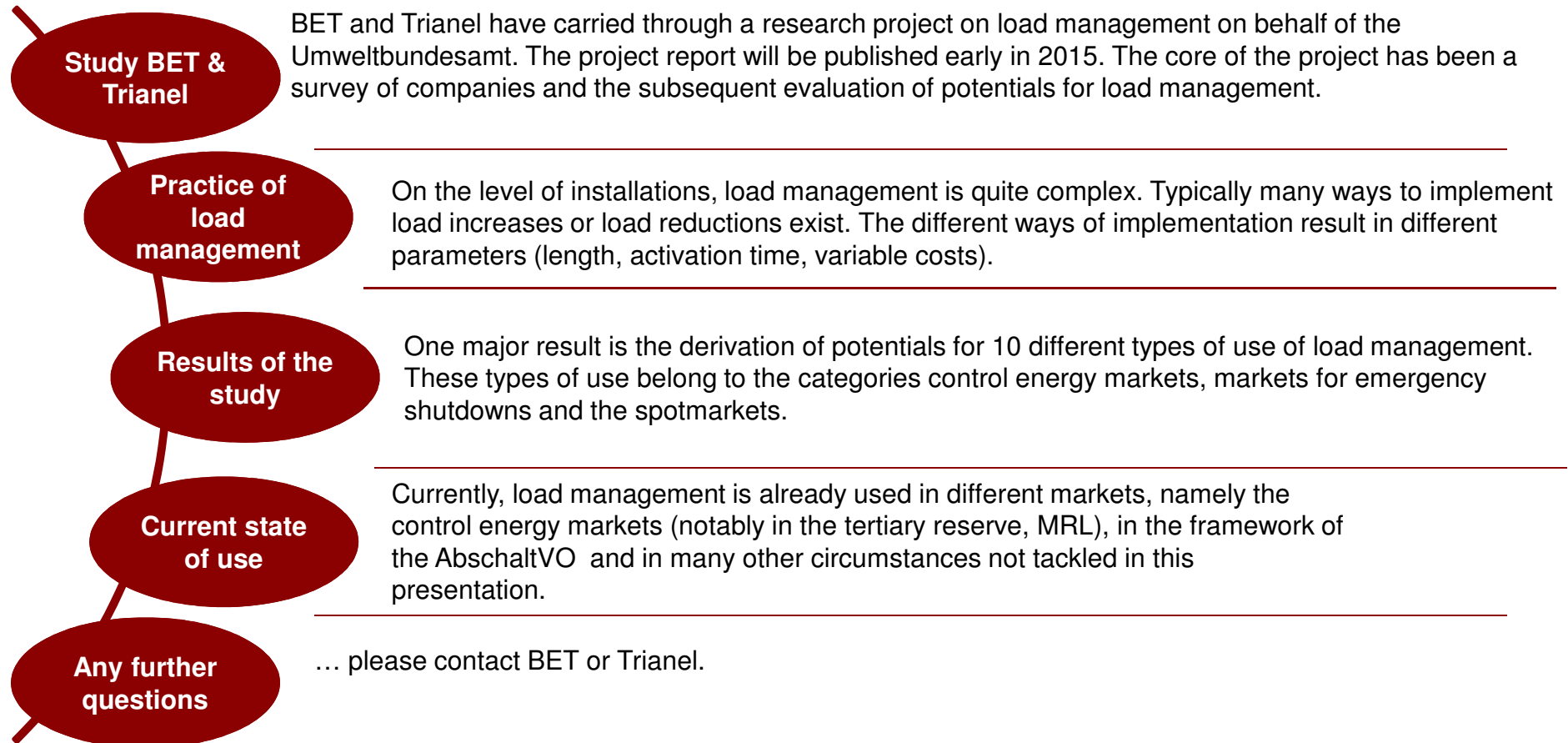
**Discussions on the efficiency and effectiveness of the AbschaltVO are not subject of this presentation.*



Compared to German peak load the potential for load reductions is small but significant. Commercialisation on spotmarkets is currently not attractive

- Load management can play a role in lowering peak electricity prices.
- Since 2008 price volatility is relatively low and according to models of BET will remain low in the next three years.
- Commercialisation of load management on the spotmarkets does not generate attractive profit margins and therefore is not on the current agenda of companies.
- Once price volatility goes up load management commercialised on the spot market is likely to go up as well.

Summary





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