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Quality assessment of indicators:

To assess the different quality levels we divided the indicators into several groups (category **A** to **C**):

- The **first** group (**A**) has **a good temporal and spatial coverage within the EU** as well as a solid methodological basis. This group includes *final energy savings*, *fossil fuels savings*, *impact on renewable targets* and *supplier diversity* and *import dependency.* These cover almost all Member States of the European Union as well as the complete period from 2000 to 2015. Furthermore, the methods these are based on are most straightforward with an excellent database directly from ODYSSEE or Eurostat. This should guarantee resilient results with a high validity and low uncertainties. Innovation and competitiveness impacts are part of this group as well as they have a good database, coverage and method, even if they are not directly linked to energy savings.
- The **second** group (**B**) of indicators consists of those **with a limited spatial and temporal coverage**, while still being based on good methodological foundation. To this group we count the indicators based on I/O-analysis, such as *GDP effects*, *employment effects* and the *effect on public budgets*, as these only cover a few countries. Nonetheless, the methods used for these indicators are solid even when we only calculate gross effects in the limited frame of our indicator approach. To this group we also count the indicators measuring the impact of EE on disposable household income and industrial productivity, as here data on income structure and energy process is only available starting from 2007 onwards. However, regarding the validity of this approach an evaluation using other existing studies on the impacts of energy efficiency policies by KfW are available showing only minor differences to our result regarding the employment effects. This reinforces our assessment of the validity and quality of our methodology developed for this purpose. As potential improvements in the future, various adjustments can be considered for these indicators, in particular by further developing them into indicators showing net impacts for employment.
- The **third** group (**C**) consists of indicators, which might have **a good temporal or spatial coverage**, but suffer from the need for simplification because of the lack of suitable data, while the method still is valid. To this group we count the indicators calculating the *local and GHG emissions* as well as *health and well-bein*g. These are based on only average emission factors for linking final energy savings to *GHG* or other *pollutants* (and further to *avoided premature deaths*). Also, the indicator turnover of EE goods, which is based on the data of a single study supplying data for a single European Country, can be counted to this group. The potential future improvements for these indicators are methodological refinements that take into account temporal and spatial changes in the systems under consideration and thus provide even more substantiated values. For these improvements, however, detailed data sets are usually lacking at the moment.
  Due to this lack of detailed data, these indicators have potential for errors in over- or underestimating the effects, but these can be assumed to be relatively minor as the

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average or single values used provide still an accurate basis for the calculations and the results should still have valid informative value.

Category	Sub-category	Indicator	Q
Environ-mental	*Energy/Resource Management*		
	Energy savings	Annual energy savings (top-down/bottom-up)	A
	Savings of fossil fuels	Annual fossil fuels saved due to EE	A
	Impacts on RES targets	Lowering of RES targets due to EE	A
	Global and Local Pollutants		
	GHG savings	Annual CO_2 savings linked to energy savings	B
	Local air pollution	Avoided local pollutants from PM2.5, PM10, NOx (incl. from electricity/heat generation)	B
Social	*Energy Poverty*		
	Alleviation of energy poverty	Impact of savings on energy cost shares in disposable incomes of low-income HH	C
	Living Comfort		
	Health and well-being	Externalities linked to health impacts	C
	Disposable household income	Changes in share of energy cost in disposable HH income due to EE	B
Economic	*Innovation/Competitiveness*		
	Innovation impacts	Revealed Patent Advantage (RPA)	A
	Competitiveness	Revealed Comparative Advantage (RCA)	B
	Turnover of EE goods	Investments linked to energy savings	C
	Economic (Macro)		
	Impact on GDP	Impacts of Energy savings on GDP growth	B
	Employment effects	Additional FTE linked to energy savings	B
	Impact on energy prices	Lower energy prices based on price elasticities	B
	Impact on public budgets	Additional income tax from employment based on energy savings	B
	Economic (Micro)		
	Industrial productivity	Semi-quantitative classification of impacts	C
	Asset value	Change in asset value of commercial buildings due to EE benefits	C
	Energy Security / Energy Delivery		
	Energy security 1	Import dependency	A
	Energy security 2	Impact on supplier diversity (Herfindahl -Hirschmann-Index)	A
	Impact on integration of RES	Demand response potential by country	C