TOP-DOWN & BOTTOM-UP APPROACH: LESSONS LEARNED FROM SLOVAKIA

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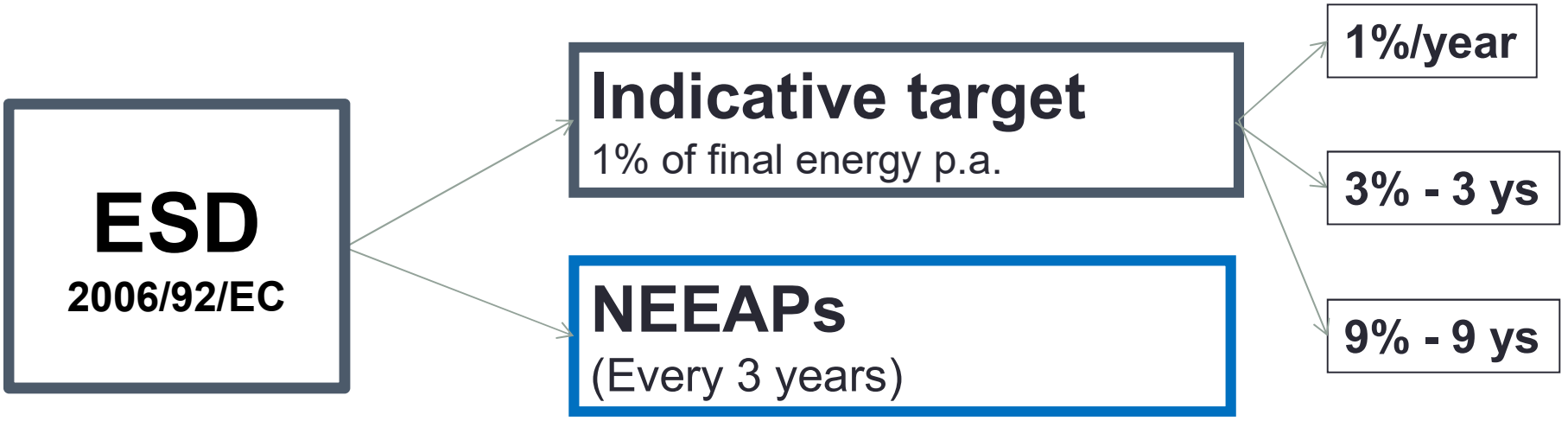
Aim

- based on the experience from preparation of the NEEAPs in Slovakia,
- to show methodological pros and cons of using BU and TD approach and
- draw lessons learned and recommendations.



Note: NEEAP – National Energy Efficiency Action Plan

Energy efficiency targets of SK: EU Energy Services Directive (ESD, 2006)

Target	Adjusted	
ESD targets	**% $FEC_{2001-2005}$**	**[PJ]**
Annual target	1%	3.1
3-year target (2008-2010)	3%	9.4
9-year target (2008-2016)	9%	28.1

- **EC requirement:**
- **min. 30% of target through BU approach**

Methodology

- **BOTTOM-UP**

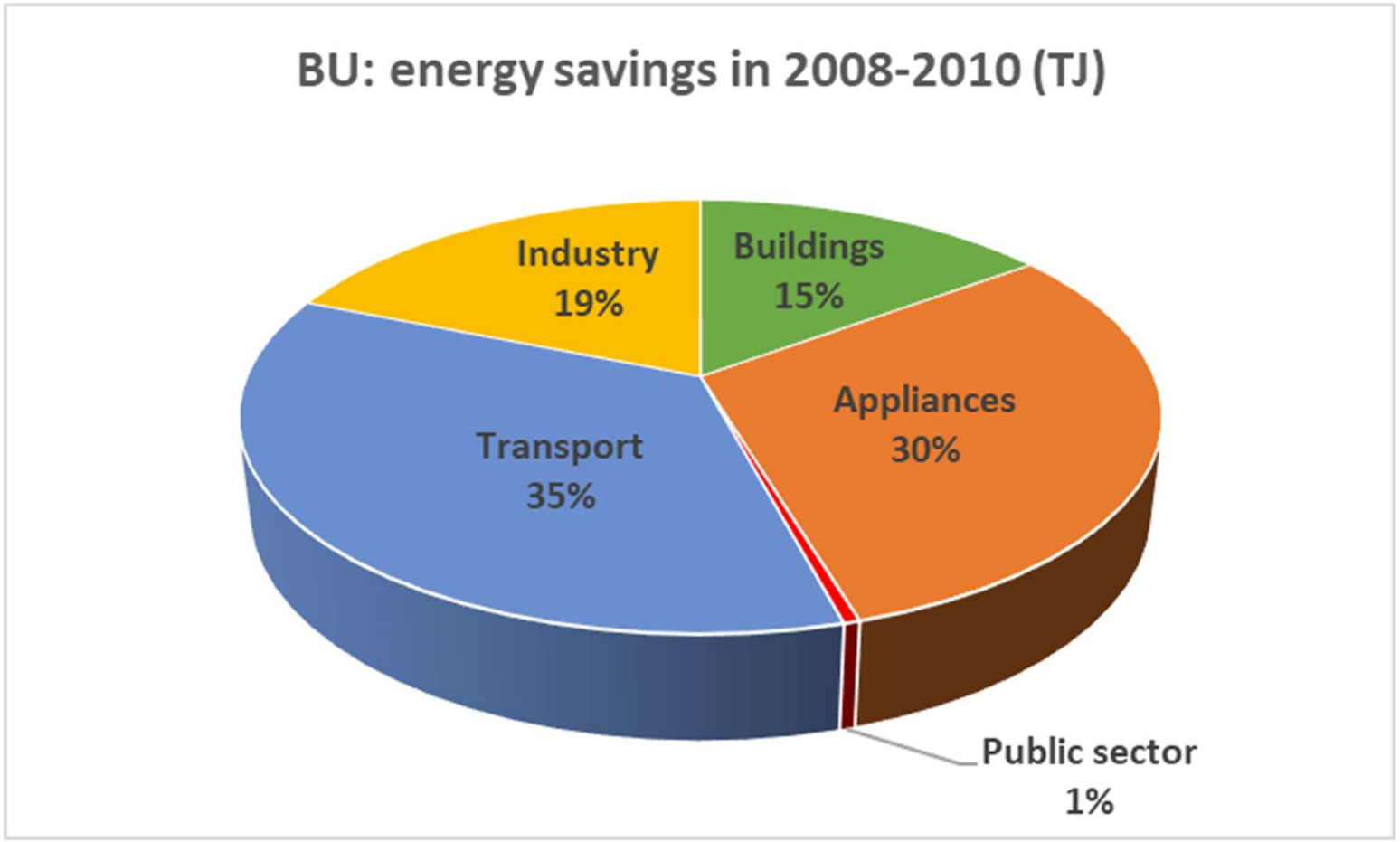
- Provides a lot of details at the project level
- Requires intensive data collection
- Time & labour intensive

- **TOP-DOWN**

- Relies on publically available statistics (minimum indicators)
- Easy data collection
- Detail of impact of EE measures may be lost

Methodology is based on the handbook of "Harmonized methods" by EC (2010).

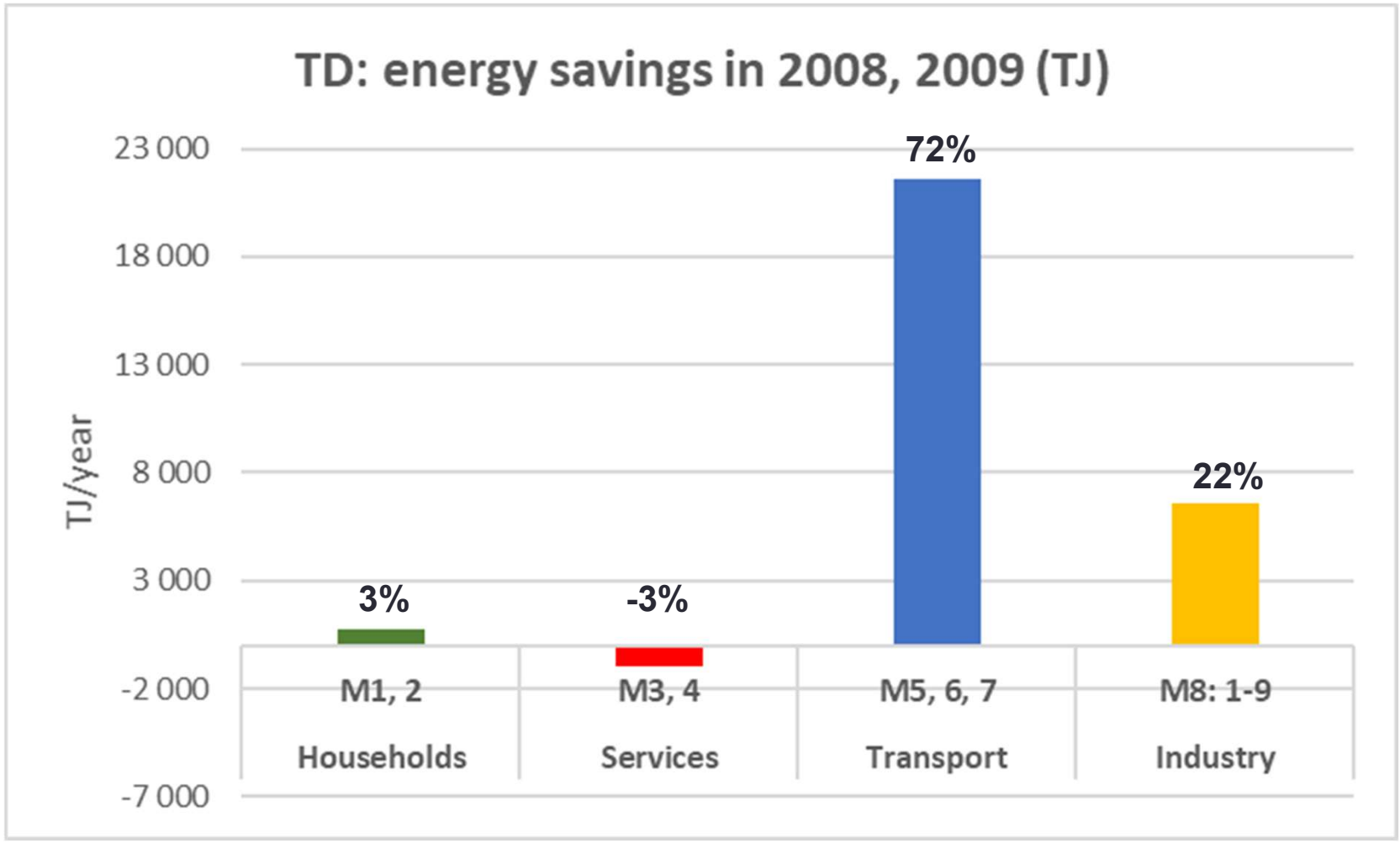
RESULTS: BU



Based on MoE SR (2011)

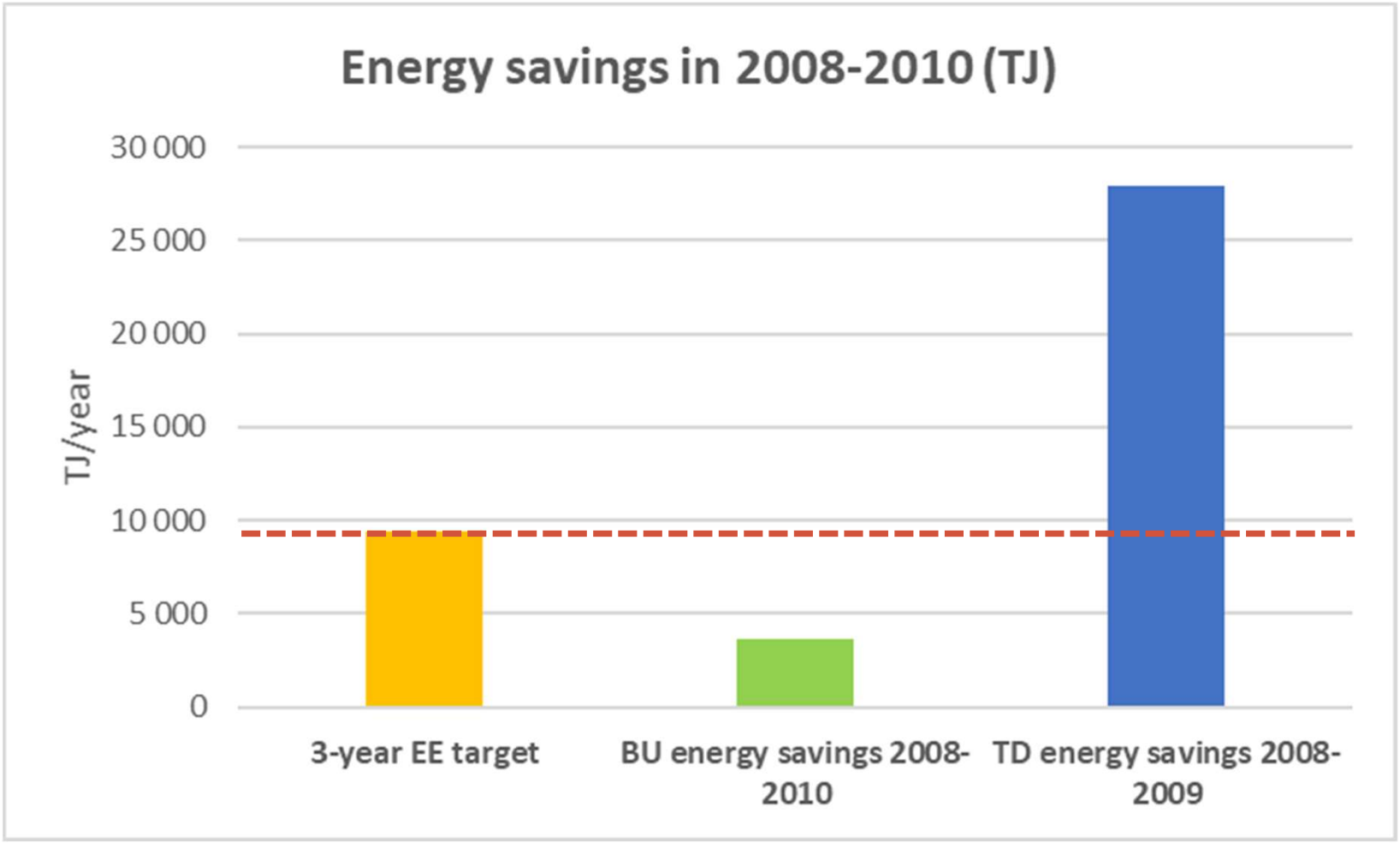
- Total ES 2008-2011: 3.7 PJ → EC: 30% of the 3-year target

RESULTS: TD



Based on MoE SR (2011)

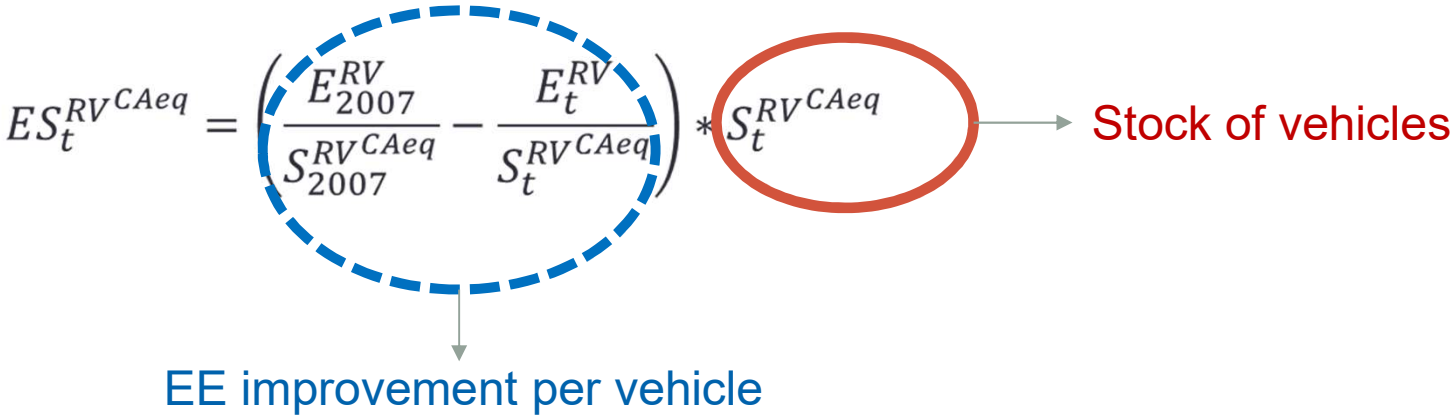
BU vs. TD



- BU: >30% of the target
- TD: ES for 2 years = almost 3x higher than 3-years target

Discrepancies: Transport

- Problem: Indicator M5 – road transport
- It applies the average EE improvement to the whole fleet, including new vehicles
- 2007-2009: FEC stable, stock of cars rose significantly



- Dilemma: account these as energy savings or not?
- *Note, that only few MSs reported energy savings from transport due to problematic evaluation (Labanca and Bertoldi 2016).*

Discrepancies: Transport (2)

- A possible solution:

  a) to develop an activity-based indicator (instead of vehicle-based) – e.g. energy use per person-km, per tonne-km (M6, M7)
    - However, even this would not ensure that the indicators will not be influenced by stochastic changes (i.e. economic crisis)

  b) to create a database by vehicle type and energy intensity (and thus apply the appropriate energy intensity to the respective vehicle group)

Lessons learned & Conclusions

- TD indicators resulted in unrealistic results
- Due to the problems with TD indicators, SK used solely BU approach further on
- With the methodology of EC (2010), TD is not recommended to be used for evaluation of EE measures at national level (exception: energy & CO2 taxes, fiscal incentives, payment to a fund & behavioral change)
  - e.g. Sweden: energy & CO_2 tax – dynamic simulation model
- TD indicators can be used for evaluation of EE trends in a specific area/subsector
  - e.g. SK used TD indicators for evaluation of energy intensity in industry – used for preparation of ESIF (2014-2020)