Extended assessment of nuclear and alternative electricity generating technologies based on their impact on national GDP (Cost-to-GDP concept)

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S.V. ROZHENKO JSC Kept, Moscow, Russia srozhenko@kept.ru

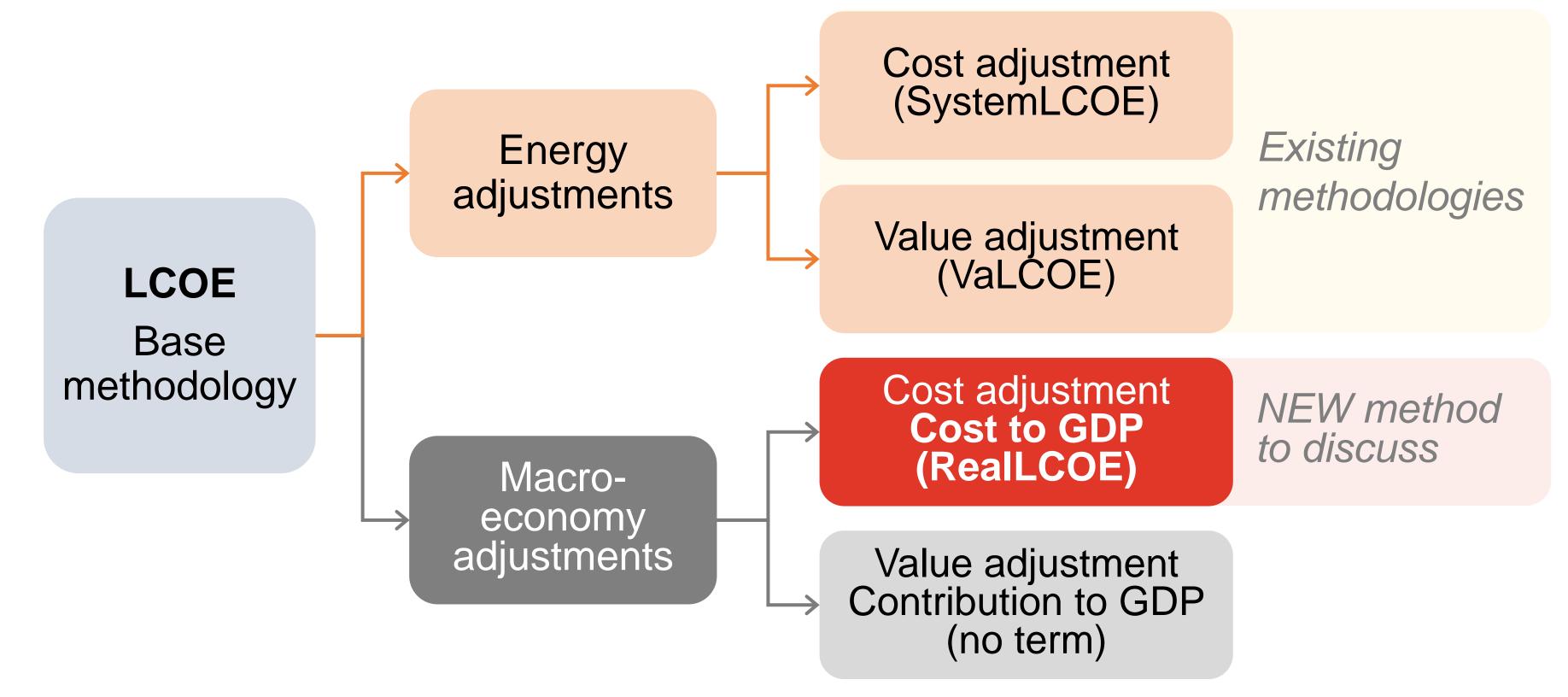
V.A. KARLE JSC Kept, Moscow, Russia

### INTRODUCTION: LCOE LIMITATIONS AND METHOD EXTENSIONS

#### Existing and proposed LCOE-based approaches

#### Cost assessment methods:

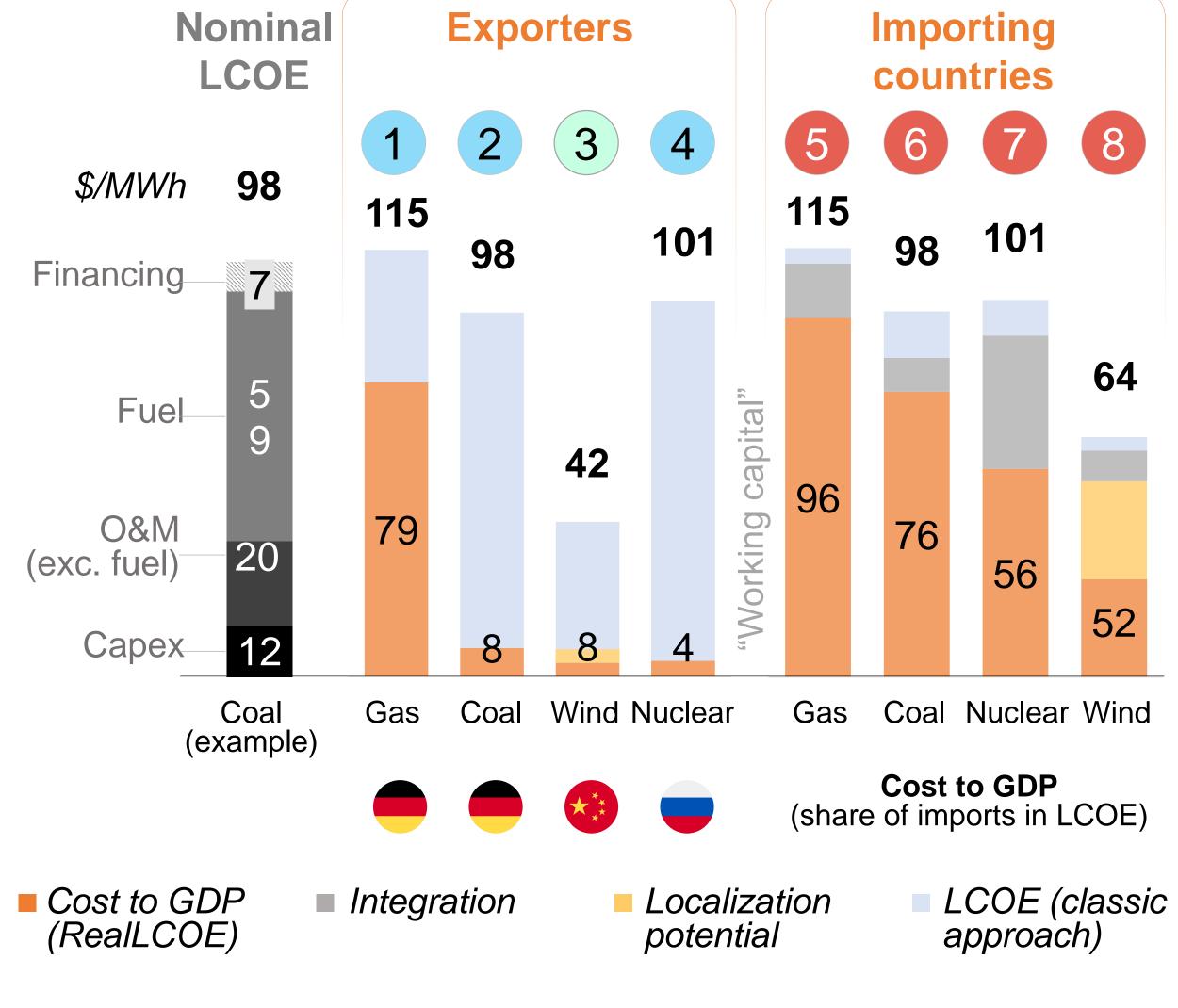
LCOE is a simple and powerful policy advocacy tool, however it does not address the technical and economic complexities required to make objective decisions in practice



## COST-TO-GDP CONCEPT (REAL LCOE)

# Cost-to-GDP Concept Least cost generation planning Economic and GDP planning Least cost to **GDP** concept

#### Real LCOE based comparison of generation sources

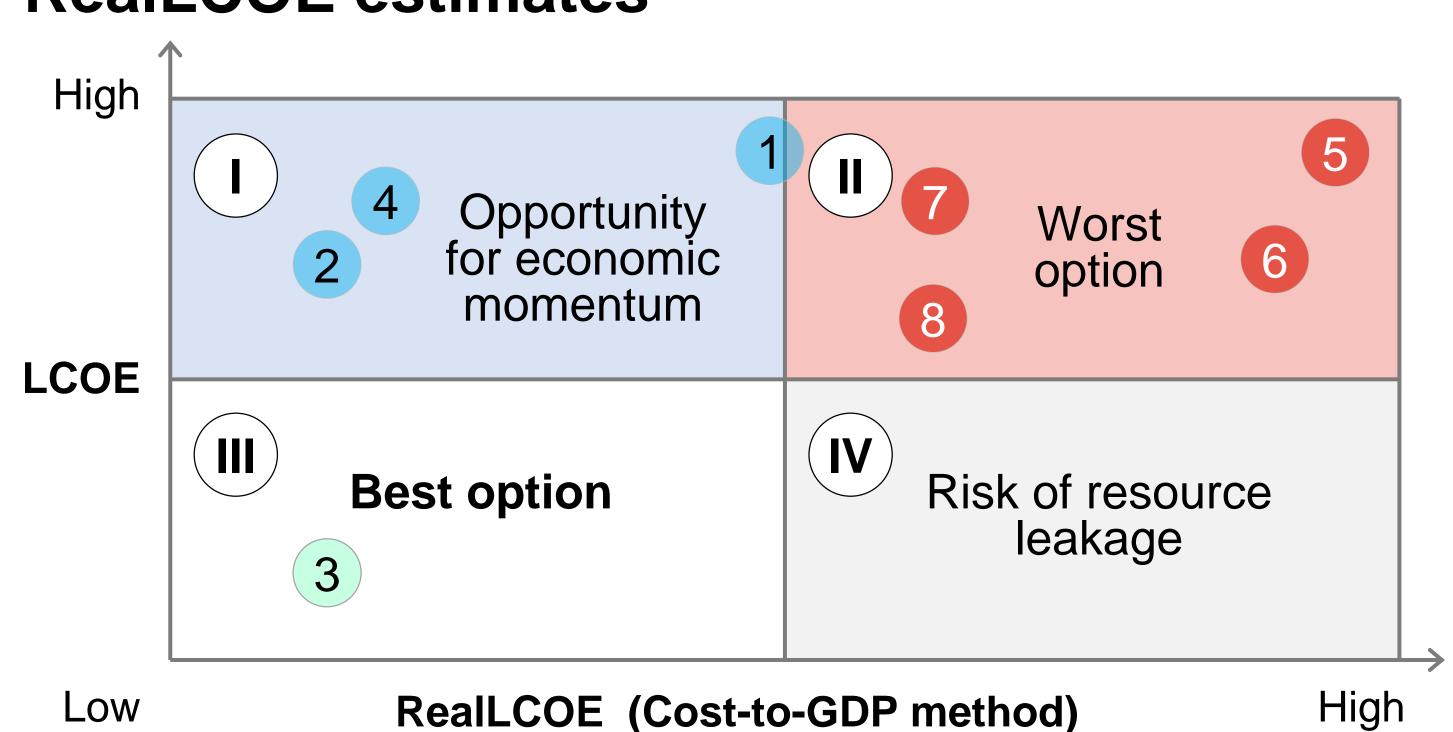


#### SMR vs renewables cost Cost-to-GDP ranking by method concept RealLCOE LCOE System LCOE Merit 1-2 1-2 2 1 order rank - SMR position shift - — — — — 119 119 119 106 \$/MWh 84 **76** 58 **53** 38 **Nuclear** Solar Wind **Nuclear** Solar Wind Solar Nuclear Wind (SMR) (SMR) (SMR) Costing Method Impact: SMR is often cost competitive vs renewables on total power system and economic costs (cost to GDP) ■ LCOE Grid Nominal Cost to Localization

integration

#### CONCLUSIONS: REAL LCOE APPLICABILITY

# Classification of technology applicability options depending on the LCOE and RealLCOE estimates



#### Cost-to-GDP approach (RealLCOE):

the costs to the economy:

costs

- technology expenditures integration costs
- the share of local content
- Objectively takes into account Provides adequate results according to the specifics of developing countries

**GDP** 

- Easy to implement for complex systems
- Easy to communicate with decision makers

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potential