Proposal for a

Roadmap for coordination of EU-Russia activities to help achieve full decarbonisation of EU energy, incl. decarbonisation of gas sector

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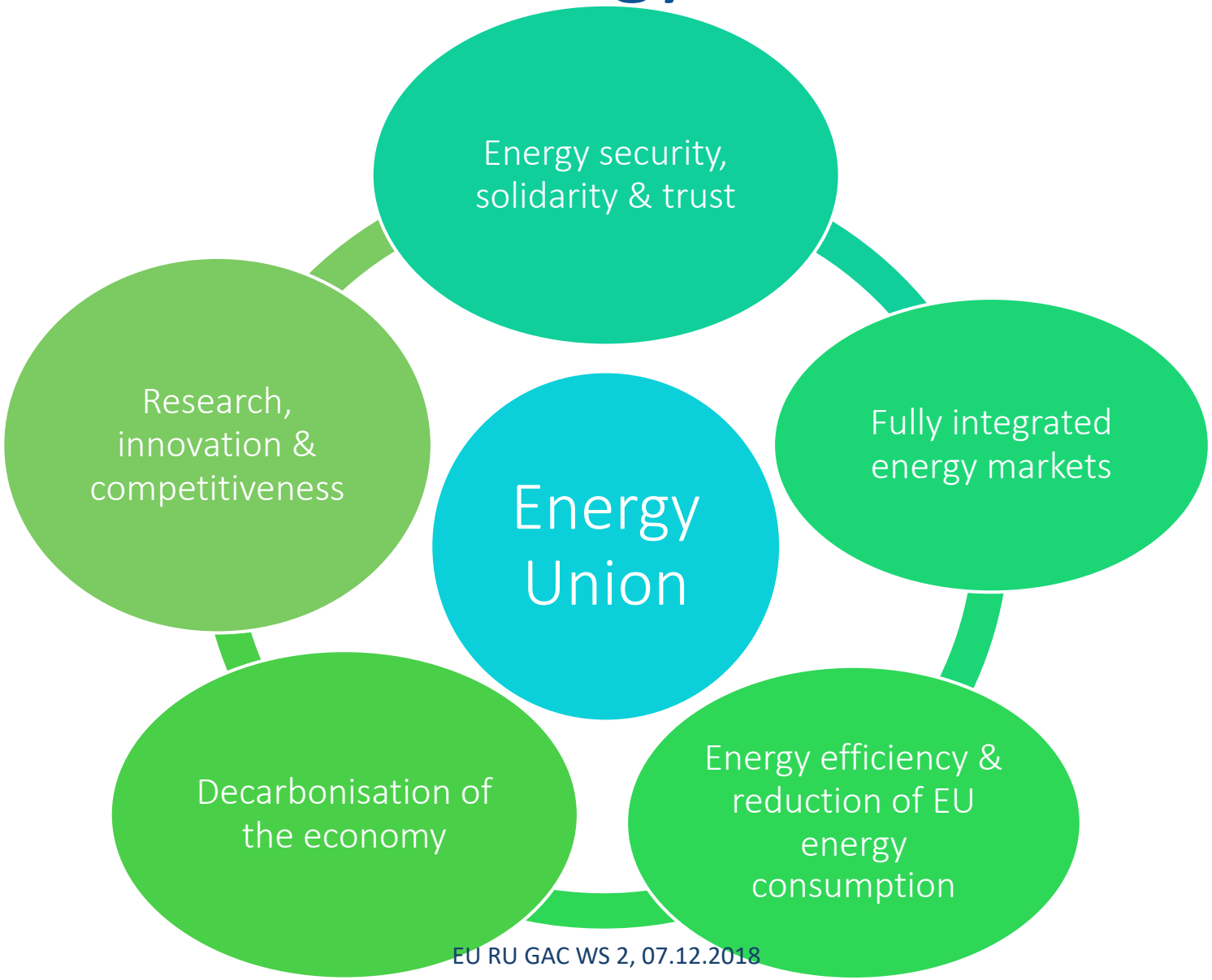
Five dimensions of the Energy Union



EU climate & energy targets are set

2020	2030	2050
Target	Target	Target
20 % THG Reduction*	40 % THG Reduction*	80 % (- 95 %) THG Reduction*
20 % RES	27 % RES	
20 % energy efficiency	Min. 27 % energy efficiency	

* Basis 1990; **13% vs. 2005

EU is determined to fully decarbonise energy sector

- The “why” question is answered in EU.
- The “what” question is answered in EU.
  - Binding EU climate and energy policy targets.
  - More recent agreements in course of CEP negotiations.
- The “how” is under discussion.
  - Full-electrification vs. joining of all forces to achieve decarbonisation.
  - Sustainable, trustworthy and verifiable solutions needed.
  - Recently published Long-term strategy.

RF approach towards decarbonisation (1)

- Starting point determined by structural facts as population density, territory size, industrial structure and abundance of natural resources as oil and gas , forests, etc.
- Monetize vast gas reserves / resources as:
  - First, gas as substitute for other (more dirty) fossil fuels,
    - IEA (2012): 2/3 of future cumulative CO2 emissions (within current technologies up to 2050) refer to coal, 22% to liquid fuels, 15% to gas => why start with gas decarbonisation?
    - Thus to expand a time-gap for R&DD for technologically neutral options & to develop „best practices“ for mutual benefit
  - Then, gas as the resource for its further decarbonization within the Russia-EU cross-border gas value chain at its segment where common benefit is the highest
- Preference for technologies with no need in CCS (if methane decomposition w/o CO2 emission)
- To use (monetize) BOTH available **gas resources & infrastructure** for this purpose
- To consider objective differences in priorities for the means of decarbonisation
  - “Solution for country with gas resources might be different from countries without gas resources” (M.James (*))

(*) Workshop “Decarbonising natural gas”, 14.11.2018, SPB

RF approach towards decarbonisation (2)

- Decarbonisation is rather the immediate means for gas monetization than the immediate target by itself => not at the price of loosing Russia's current competitive advantages in energy sphere (low carbon abandoned gas reserves) => to develop first & most its low-carbon gas component for mutual RF-EU benefit:
  - "if Russia wants to help EU to build (become the first) H2-based economy…" (M.James / M.Hafner(*)) = > Export-oriented decarbonisation, incl. in gas ???
  - fast gas system transformation from CH4 to H2 = "to develop a totally new grid system of a scale that never existed before in a very short period of time" (J.Ball (*)) => adequate assessment of all reasonably possible decarbonisation alternatives => to "diminish to tolerable level risk of inadequate investment decisions" which are "the highest threat to international energy security"
  - Cooperation is between sovereign states => national priorities does matter => does not mean export of one party's approach to decarbonisation to another, but joint assessment of different alternatives among broad range of available options => technologically neutral approach => integrated joint study(ies) as first step ? => role of GAC WS2

(*) Workshop "Decarbonising natural gas", 14.11.2018, SPB

Objective differences but the common basis for joint EU-Russia decarbonisation efforts

The EU:

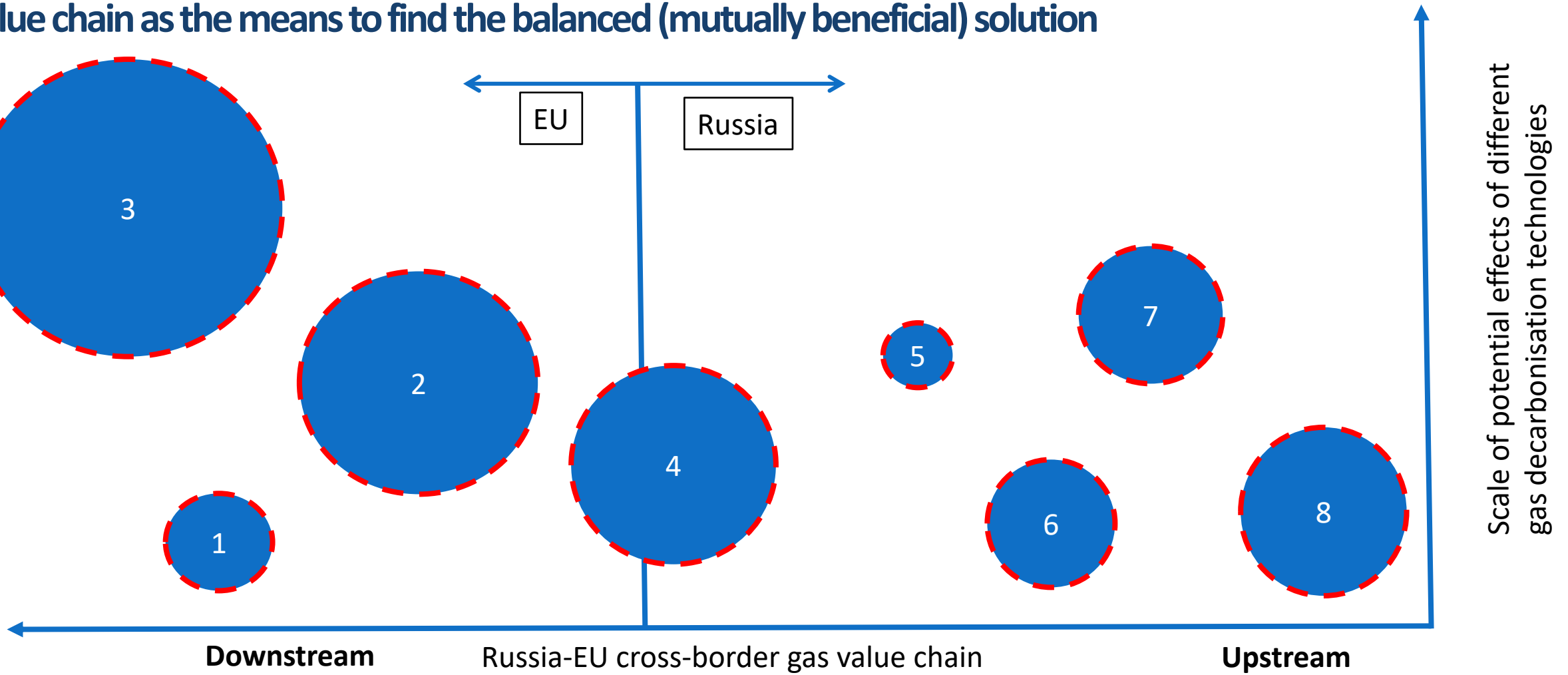
- Industrialisation started earlier => higher negative accumulated environmental effect (learning by doing)
- High industry concentration, smaller territory, higher population density
- Low natural absorption capacity (forests, marshes) => Net-emitter CO2/GHG
- Decarbonisation is an immediate task => readiness to pay higher price for it (higher per capita income)

Russia:

- Industrialisation started later => smaller negative accumulated environmental effect (learning by other's experience)
- High industry concentration locally, much lager (incl. yet undeveloped) territory, lower population density
- High natural absorption capacity (forests, marshes) => Net-absorbent CO2/GHG
- Not as urgent task as in EU => not ready to pay high price for moving immediately to most capital-intensive posterior steps in decarbonisation set of actions (lower per capita income)

Decarbonisation in Russia & in EU are two different stories, BUT common denominator (though within different priorities) = available cross-border Russia-EU capital-intensive immobile gas infrastructure => NOT to be converted into stranded asset => material background for Russia-EU cooperation in decarbonisation (within its broader meaning) => RF + EU = "Broader Energy Europe"-based approach?

Conceptual (technology-neutral/non-discriminative) approach: joint evaluation of potential implementation effects of different gas decabonisation technologies at different segments of the Russia-EU cross-border gas value chain as the means to find the balanced (mutually beneficial) solution



Notes: (1) figures = technologies (potential best practices); (2) optional effects: (i) “cost-plus” price (at end-user) of 1 kg of Hydrogen (center of circle), (ii) projected cumulative CO2 emission saving per unit cost, (iii) ???; (3) size of circles = measurable effect (both sides to jointly decide: what to measure & how to calculate; an option = market for hydrogen in specific sectors compared to alternatives OR); size of circles purely illustrative

Benefiting from cooperation

Full decarbonisation of energy markets is

- Very high on the EU as well as the Russian agenda
- A complex task involving many different sectors and players
- Possible with different approaches and these would have very different consequences
- Requiring cooperation and coordination across borders and between producers and users of gas

Internal markets workstream could enrich discussions on the future role of gas and, furthermore, on full decarbonisation of the energy system by

- Offering room for exchange at expert level of views and ideas, originated from different standpoints & within different set of priorities
- Highlighting possible need for further dialog and assessment
- Exchanging best practices in a technologically neutral way

EU RU GAC WS 2 – proposal for activity

1. Differentiated exchange of information, ideas, concepts, etc.
2. Discussion how different roles and activities could look like.
3. Room for open discussion without need for agreement, however, possibility to identify common grounds & further expand them by reaching common understanding through dialogue under (1) & (2) above.
4. If meaningful and possible, coordination of approaches

2050

1990