***What could be the main indicators in terms of the risk assessment of this transformation (from carbon-based to RES) towards unified regulations? Experience based indicators.***

In analyzing the risks and challenges associated with moving toward renewable energies, the primary drivers are usually cost, **supply,** and politics. Especially in considering “unified regulations” within the European Union, a principle concern is collective buy-in between sovereign nations who have different energy profiles, different budgets, and different availability of alternative energy. For example, in Belarus, only 6% of its energy mix is in renewables (<https://www.iea.org/reports/belarus-energy-profile>). Belarus is landlocked and not located in a particularly windy or sunny part of Europe, so wind, solar, and hydroelectric access is less-than-idea. Belarus also sits in the middle of Russia’s gas transit corridor to Western Europe, making natural gas a relatively cheap energy source. Belarus’s infrastructure for renewables is also relatively undeveloped, so even if it attempted to curtail its traditional fuel resources, it would not be able it meets consumer demand.It’s lone utility provider, BelEnergo, is a government-controlled enterprise and can therefore be subject to more internal political pressure than a private company. For Belarus, the risk assessment in transformation is balancing its interest in climate change mitigation and sustainable energy growth with the internal and external political pressures of maintaining their cheaper energy sourcing. For the European Union, its risk assessment includes securing buy-in from countries like Belarus, that are not necessarily benefitted from the clean energy transformation.

Central to EU unified regulations is flexibility. The clean energy transformation must allow for decentralized pacing that is specific to the risks and benefits of each country. EU policymakers must also be realistic about supply capacity and how it can meet demand—if a country moves too quickly off of traditional power supplies without adequate renewable replacements, they may be unable to meet demand. Renewable energy presents different supply challenges for energy producers because power generation is reliant on the weather and the renewable energy infrastructure. There needs to adequate allowance for use of bridge fuels like natural gas to meet needs during peak demand. The EU must also incentivize transformation through resource-pooling, especially for the countries with less to gain. Key to these incentives are EU investment in climate change-related programs and the EU’s interconnection targets. As a part of the EU’s investment in climate change, the EU established the Cohesion Fund and the Structural Funds, which aim to reduce regional disparities in terms of income, wealth and opportunities and support the shift towards a low-carbon economy in all sectors. The EU’s interconnection goal is aimed at increasing cross-country access the energy resources. Referring back to Belarus, Belarus is so heavily reliant on Russian natural gas because Russia pipes gas through Belarus. If Belarus were connected to solar farms to the south or wind farms to the north and west, clean energy would become a cheaper alternative.

***How does function the feed-in-tariff applied in Germany and how can it be generalized in Others countries?***

I will refer you to the following link for a more detailed explanation of the German Feed-In Tariff: <http://www.res-legal.eu/search-by-country/germany/single/s/res-e/t/promotion/aid/feed-in-tariff-eeg-feed-in-tariff/lastp/135/>.

Essentially, Germany’s Renewable Energy Act (EEG) provides a premium (“tariff”) for energy producers who use renewable energy sources. The tariffs range in value by the type of energy source, with larger tariffs going to cheaper energy sources like offshore wind. The tariff is fixed for 20 years—providing more predictability in investment, but the tariff decreases every year—to encourage more investment to improve efficiency. The costs of the tariffs are distributed equally among electricity users, with a cap on increases for energy intensive industries.

Regarding your question about how the feed-in tax may be generalized in other countries, I will refer you to the following link referring to different feed-in-tariffs in Europe: <http://www.feed-in-cooperation.org/wDefault_7/wDefault_7/download-files/research/best_practice_paper_2nd_edition_final.pdf>.

The German feed-in tariff system has been used as a model throughout Europe and abroad. The principle areas which can bestructured differentlyare tariff amounts, distribution of tariff by source, and how costs are borne. Regarding tariff amounts, the larger the tariff, the more likely a generator will be to invest in renewable energy. However, this will lead to a corresponding impact on cost to energy users.

Regarding distribution of tariffs by source, a tariff could be aimed at small scale generators (solar panels on rooves) or large-scale utilities depending on what the targeted policy goal demands. The tariff may also be aimed toward certain types of renewable energy to either take advantage of a comparatively cheap energy source (Danish wind) or to develop a non-existent but strategically important energy source (Polish solar).

Cost-sharing can also be manipulated to achieve certain policy goals. As noted above, Germany has a cap on the rate at which an energy intensive industry must pay in added energy costs. The Netherlands, for example, does not create such an exception, forcing energy intensive industry to pay more. Feed-in tariffs must be tailored to national economic and energy resources, current energy mix profiles and desired future mix profiles, and to spread cost in a palatable way to all constituents involved.