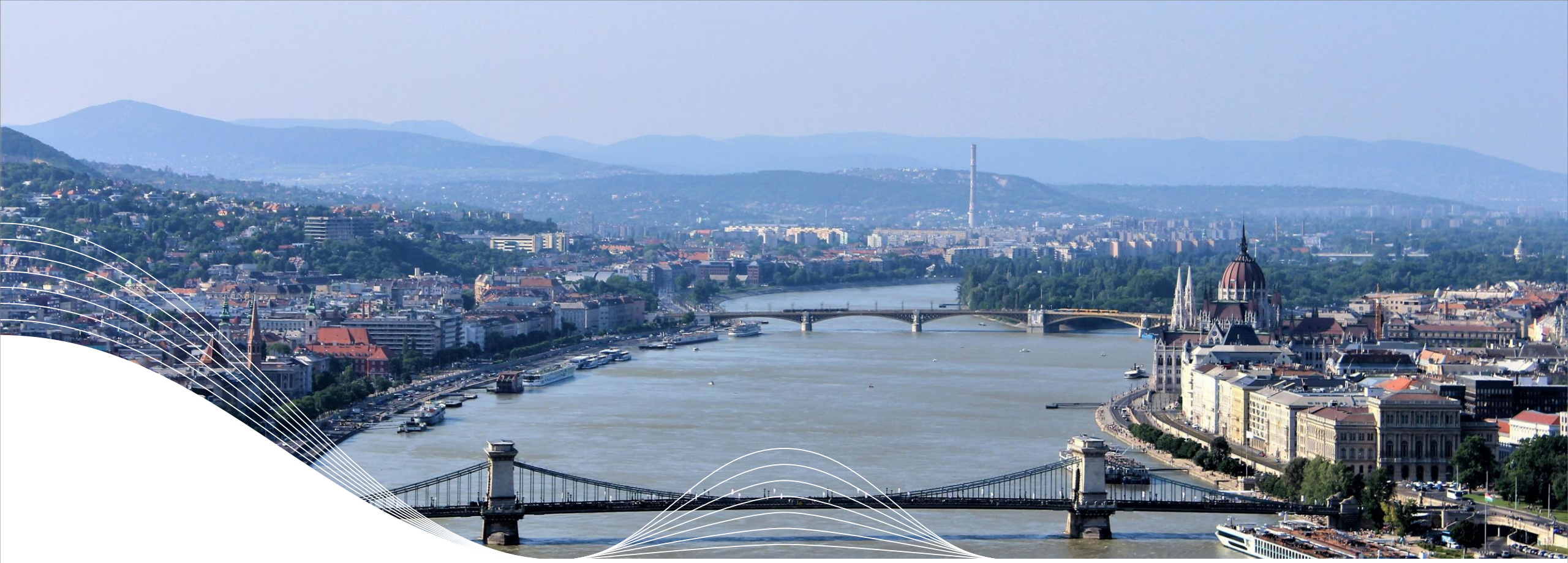

The Application of the Market Economy Operator Principle in Practice

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Recap - Benchmarking or other assessment methods from the Commission Notice on the notion of state aid

Prudent market economy operators apply multiple assessment or valuation methods

Whether a transaction is in line with market conditions can be assessed based on generally-accepted, standard assessment methodology.

One of the widely accepted standard methodologies is to determine **the internal rate of return (IRR)** of the project or its **net present value (NPV). – Income approach to valuation**

The assessment must be based on the available **objective, verifiable and reliable data**

It should be **sufficiently detailed**

It should reflect the **economic situation** at the time at which the transaction was decided

It should take into account the **level of risk** and **future expectations**

It should reflect the **specific features** of the sector, region or country

The robustness of the evaluation should be corroborated by performing a **sensitivity analysis**

Source: Commission Notice on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union (2016/C 262/01)

International Valuation standards – Market approach and cost approach

Market approach

- The market approach provides an indication of value by **comparing the asset with identical or comparable** (that is similar) assets for which price information is available *(IVS 105, 20.1).*
- The market approach often uses **market multiples**.
- The two most commonly used methods are the **Comparable Transaction Method** *(IVS 105, 30.1-30.8)* and the **Guideline publicly-traded comparable method** *(IVS 105, 30.9-30.14).*
- In most cases it is often necessary to make adjustments based on size / geographic location / profitability, etc. *(IVS 105, 30.7, 30.8 and 30.14):*
- The method **should be used only when the subject asset is sufficiently similar** to the identified comparables to allow for meaningful comparison (*IVS 105, 30.11).*

Cost approach

- The cost approach provides an indication of value using the economic principle that a buyer will pay no more for an asset than the **cost to obtain an asset of equal utility, whether by purchase or by construction**, unless undue time, inconvenience, risk or other factors are involved.
- The approach is applicable when the **subject asset is replicable.**
- This approach provides an indication of value by calculating the current replacement or reproduction cost of an asset and making deductions for physical deterioration and all other relevant forms of obsolescence (physical, functional, technological, economic, etc.). *(IVS 105, 60.1, 60.2., 60.3)*

Internatonal Valuation Standards – Income approach

Income approach

- Under the income approach, the value of an asset is determined by reference to the value of income, cash flow or cost savings generated by the asset.*(IVS 105, 40.1).*
- The income approach can be applied and afforded significant weight under the following circumstances:
  - **the income generating capacity of the asset is the critical element** affecting value, and/or
  - **reasonable projections of** the amount and timing of **future income are available** for the subject asset.
    - It is necessary to have **a business plan covering at least 3-5 years**, which contains a detailed revenue plan, cost plan and a balance sheet plan.
- **In the lack of these circumstances, we consider whether any other approaches can be applied.** *(IVS 105, 40.2 and 40.3)*

Key considerations

- Choosing the **most appropriate type of cash flow** for the nature of the subject asset and the assignment *(IVS 105, 50.5-50.7)*:
  - Total cash flow or cash flow to equity holders;
  - Nominal or real cash flow;
  - Currency.
- The selection of **explicit period** *(IVS 105, 50.8-50.11)*, considering:
  - The exit strategy of the investor;
  - Useful life of the subject asset;
  - Cyclical characteristics;
  - the minimum explicit forecast period which should be sufficient for an asset to achieve a stabilized level of growth and profits.
- The **risk associated** with the subject cash flows *(IVS 105, 50.16-17)*. The projected cash flow will reflect one of the following:
  - contractual or promised cash flow,
  - the single most likely set of cash flow,
  - the probability-weighted expected cash flow, or
  - multiple scenarios of possible future cash flow.

Discount Rate Estimation

Discount Rate

- The **discount rate** that is used to discount the expected cash-flow, should **reflect** not only **the time value of money**, but also the **risks associated with the type of the cash-flow** and the future operations of the asset *(IVS 105, 50.29.)*.
- In developing a discount rate, one should consider
  - The type of asset (e.g. real property, business);
  - The geographic location of the asset;
  - The life/term and/or maturity of the asset;
  - The bases of value being applied;
  - The currency denomination of the projected cash flows;
  - The rates implicit in comparable transactions in the market.

WACC

- Widely accepted method to determine the discount rate is the calculation of **weighted average cost of capital (WACC).**

$$WACC = r_E * \frac{E}{V} + r_D * \frac{D}{V} * (1 - T)$$

Where:

- r_E – Cost of Equity
- E – Market value of equity
- V – Market value of firm
- r_D – Cost of Debt
- D – Market value of debt
- T – Tax rate

Discount Rate Estimation

Cost of equity

- Accepted method to estimate the cost of equity is the **capital asset pricing model (CAPM).**
- According to the CAPM the **investors expect return** above the risk-free rate **due to the risk taken** with the investment.

$$r_E = r_f + \beta * ERP + SRP + Company\ specific\ risk\ premium$$

Where:

- r_f – Risk free rate
- β – Beta (Systematic market risk)
- ***ERP*** – Equity risk premium

- **Other risk premiums** can be considered during the calculation the cost of equity.
  - **Size risk premium (SRP)** is applicable if the peer group used for the estimation of the ERP includes lager companies than the valued firm.
  - **Company specific risk premium** can be applied if the company has a unique risk which is not captured by the beta.

Beta

- The beta estimation is based on the **observable betas of the stocks of the peer companies**.
- These betas **reflect not only the systematic risk but the risk specific to the financing structure** as well.
- To eliminate the financing effect unlevered beta can be calculated.
- The adjusted beta can be levered by the leverage of the target company or the typical leverage of the industry.

Cost of debt

- Cost of debt covers interests and other financial costs, that must be paid to the debtors of the company but does not include the tax benefit of interest payment, which is considered separately in the WACC calculation.

Adjustments for control

Control Premium / Discount for Lack of Control

- Control enables owners to exercise financial, operational, and strategic management; to decide on the purchase and sale or use of assets; to determine remuneration guidelines and dividend policy.
- All else being equal, a **rational investor would generally prefer to have control** over a subject asset than not *(IVS 105, 30.17).*
- The investors' willingness to pay a **Control Premium (CP) or Discount for Lack of Control (DLOC)** will generally be a factor of whether the **ability to exercise control enhances the economic benefits** available to the owner of the subject asset.
- CPs or DLOCs are typically calculated based on
  - **Comparing observed prices paid for controlling interests** in publicly-traded securities to the publicly-traded price before such a transaction is announced; OR
  - An **analysis of the specific cash flow enhancements or reductions in risk** associated with control.

Control rights may include

- Defining the company's business policy and strategy;
- Acquisition or sale of assets;
- Purchase of other companies or mergers with other companies;
- Dividend or preferred dividend rights;
- Sale or liquidation of the company;
- Appointing management and determining compensation
- Put and/or call rights.

Adjustments for illiquidity

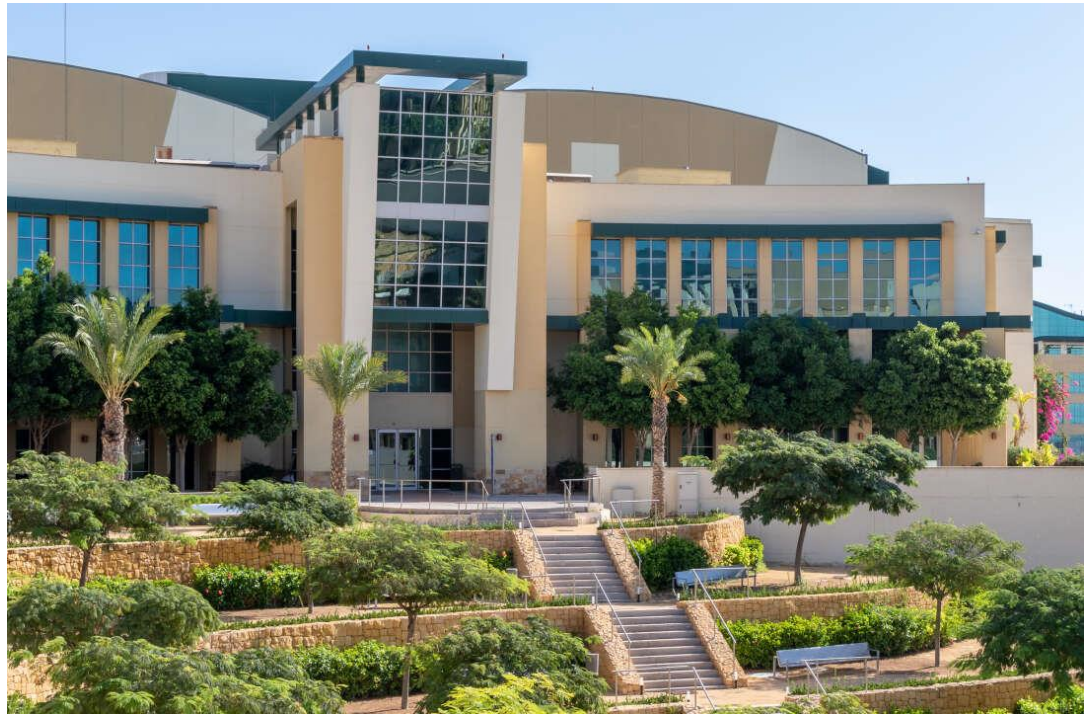
Discount for Lack of Marketability

- Discount for Lack of Marketability (DLOM) should be applied when the comparables are deemed to have superior marketability to the subject asset.
- A DLOM reflects the concept that when comparing otherwise identical assets, a **readily marketable asset would have a higher value** than an asset with a long marketing period or restrictions on the ability to sell the asset *(IVS 105, 30.17).*
- DLOMs are typically calculated based on
  - **Comparing the value of publicly-traded shares and restricted shares** in the same company; OR
  - Comparing the value of shares in a company **before and after an initial public offering**; OR
  - Using **option pricing models**.

Case study – Ciudad de la Luz film studio

Background

- In 2000 the Region of Valencia invested in the creation of **Ciudad de la Luz cinema complex**
- Initially, the cinema complex had another owner, a private production company
- In 2004 the Region of Valencia increased capital as well as acquired the shares of the production company
  - Te Region of Valencia became 100% owner of the cinema complex
  - The production company continued to take care of the management of the film studio



Source: Judgment of the General Court of 3 July 2014 – Spain v Commission (Case T-joined Cases T-319/12 and 321/12) (State aid – Cinematography – Aid for the construction and operation of a film studio complex – Decision declaring the aid incompatible with the internal market – Criterion of private market economy investor – State aid for regional purposes – Aid to promote culture – Duty to state reasons) (2014/C 282/37)

Case study – Ciudad de la Luz film studio

Market Economy Investor Principle test

- The **European Commission (EC) expressed concerns** that the measure would entail **State aid**
- The grounds for doubts derived from the result of the **Market Economy Investor Principle („MEIP") test**
- Spain estimated the **IRR of the project** to be larger than a **market-based benchmark Cost of equity**
  - The Commission raised doubts as to whether the **Cost of equity was to be considered higher**
  - Although the Commission **considered the cash flow projections to be optimistic**, it did not adjust them and retained the figures proposed by the Spanish authorities.

THE KINGDOM OF SPAIN IS GRANTING STATE AID TO CIUDAD DE LA LUZ

	Spain	EC
Risk-free rate	4.1% (10Y government bond yield in 2004)	
Beta	0.38 (based on financial database)	1.5-1.68 (based on two direct competitors)
Equity Risk Premium	4.3% (based on a 2009 study of the European equity markets)	6.8% (based on a 2004 study of the Spanish equity market)
Cost of equity	5.73%	14.9%
IRR	5.74%	

Case study – Ciudad de la Luz film studio

Compatibility with the internal market

The Commission further examined whether the measure was **compatible with the internal market**

If it aims to achieve an **objective of common interest**

- The project did not have the purpose of preserving heritage and was not aimed promoting European culture.
- The film studio chose its films purely on a commercial basis.

If it is **necessary and proportionate**

- Highly competitive market where a lot of large European and non-European film studios operate.
- There was no market failure.

If the **positive effects outweigh the negative effects** on competition and trade

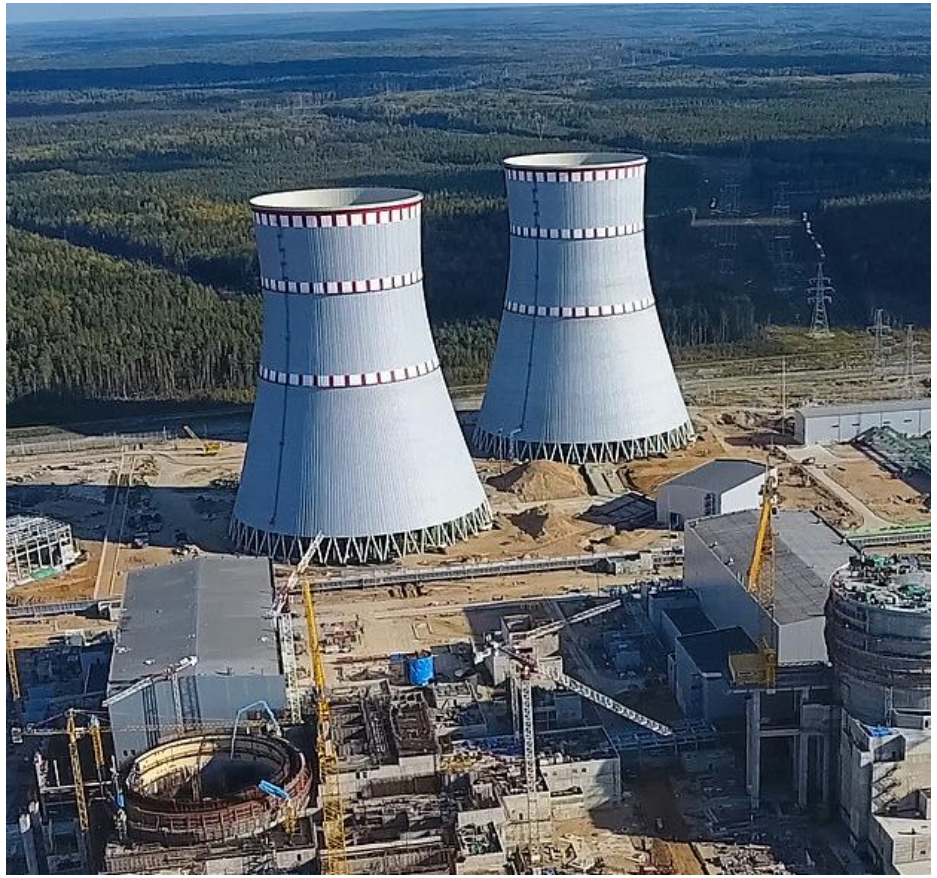
- The measure threatened to distort competition and affected trade between Member States

THE MEASURE IS INCOMPATIBLE WITH THE INTERNAL MARKET

Case study – Paks II nuclear power plant

Background

- Hungary intended to develop **two new nuclear reactors** (Paks II)
- Goal: to compensate the loss in capacity when the 4 existing reactors in Paks retire (in 2032, 2034, 2036, 2037)
- The Russian Federation and Hungary concluded an **intergovernmental agreement in January 2014**
  - The construction would be **fully financed by the Hungarian State**
    - Russia undertook to provide Hungary with a state loan to finance the development
  - Russia involved in the design, construction, commissioning and decommissioning of the new reactors
- EPC contract concluded in December 2014



Source: Commission Decision (EU) 2017/2112 of 6 March 2017 on the measure/aid scheme/State aid SA.38454 – 2015/C (ex 2015/N) which Hungary is planning to implement for supporting the development of two new nuclear reactors at Paks II nuclear power station

Case study – Paks II nuclear power plant

Market Economy Investor Principle test

- The **European Commission (EC) expressed concerns** that the measure would entail **State aid**
- The grounds for doubts derived from the result of the **Market Economy Investor Principle („MEIP") test**
- Hungary estimated the **IRR of the project** to be larger than a **market-based benchmark WACC**
  - The Commission raised doubts as to whether the **WACC was to be considered higher**
  - Also, the Commission performed **refinements in the IRR estimation**
    - Revised the electricity price forecasts
    - As for costs and the load factor, incorporated information submitted by interested parties
    - Performed a sensitivity check

THE HUNGARIAN STATE IS GRANTING STATE AID TO PAKS II

	Hungary	EC
Risk-free rate	3.8% (15Y government bond yield in Nov-Dec 2014)	5.3% (2014 average)
Beta	0.92 (in line with benchmarks)	
Leverage	40-50% (in line with benchmarks)	
Corporate tax rate	19% (statutory tax rate)	
Equity Risk Premium	4.0% (10 years' historical equity market performance)	8.57% (based on Damodaran and Fernandez)
Debt premium	OECD CIRR rate	2.26% (commercial debt risk premium)
WACC	6.2-7.7%	9.15-10.36%
IRR	8.6-12.0%	8.20-9.36%

Case study – Paks II nuclear power plant

Compatibility with the internal market

The Commission further examined whether the measure was **compatible with the internal market**

If it aims to achieve an **objective of common interest**

- ✓ Promoting new nuclear investments is in line with the Euratom Treaty
- ✓ Contributes to security of electricity supply

If it is **necessary and proportionate**

- ✓ It is necessary to increase capacity due to the retirement of existing power plants
- ✓ Financing nuclear technology is unattractive due to high risks (construction, long payback period) and the conservatism of prospective financiers (Eurozone troubles, Basel III)

If the **positive effects outweigh the negative effects** on competition and trade

- ✓ High market concentration only temporary until the existing reactors phase out
- ✓ The electricity produced by Paks II will be available on the wholesale market for all market players in a transparent manner

THE MEASURE IS COMPATIBLE WITH THE INTERNAL MARKET

Thank you for your attention!

Any questions? Feel free to contact us:

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