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**Hydropower Investment
Promotion Project (HIPP)**

Opportunities for the Georgian Hydropower industry to benefit from Directive 2009/28EC of the European Parliament



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What Europe wants to do

- Comply with the Kyoto Protocol and further international greenhouse gas emission
- **Increased use of energy from renewable sources**
- Energy Efficiency
- Energy Savings

HOW?

- Security of Energy Supply
- Promoting technological development and innovation
- Provide regional power development in rural and isolated areas
- Increase public transport
- Increase local or regional small and medium enterprises (SMES)



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Why does HIPP care?

EU's directive:

Increased use of energy from renewable sources

The main purpose of mandatory national targets is to provide certainty for investors and to encourage continuous development of technologies which generate energy from all types of renewable sources. Deferring a decision about whether a target is mandatory until a future event takes place is thus not appropriate.



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What does the EU consider a renewable source?

Directive 2001/77/EC and **Directive 2003/30** established definitions for different types of energy from renewable sources.

‘Energy from renewable sources’ means energy from renewable non-fossil sources, namely wind, solar, aero thermal, geothermal, hydrothermal and ocean energy, **hydropower**, biomass, landfill gas, sewage treatment plant gas and biogases;

Further, electricity produced in pumped storage units from water that has previously been pumped uphill should not be considered to be electricity produced from renewable energy sources.



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Great- but how much energy?

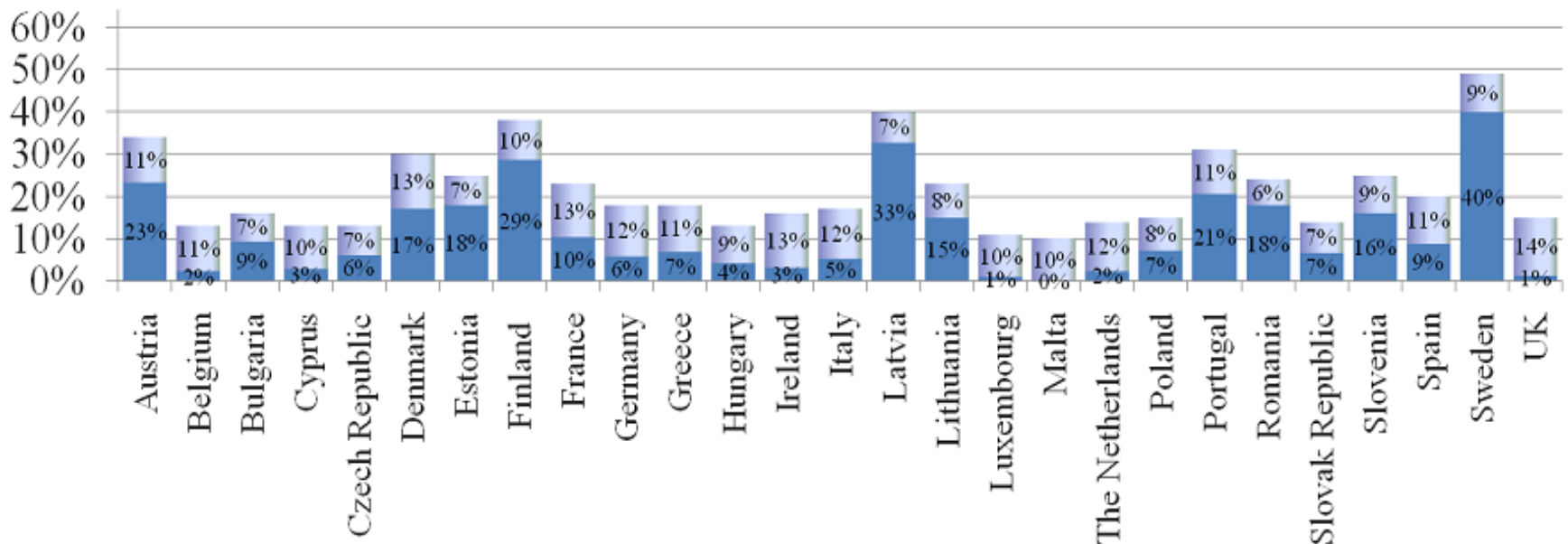
In 2008, the European Parliament decreed:

- 20 % target for the overall share of energy from renewable sources
- Different goals for member states due to variance in starting point of renewable energy potential and current energy mixes.
- On June, 2011 Josche Muth, Secretary General of the European Renewable Energy Council (EREC) proposed a level of 45% for 2030.



Will EU countries need to import it?

Yes! It is estimated demand for energy from renewable sources to be satisfied by means other than domestic production to hit 2020 goals.

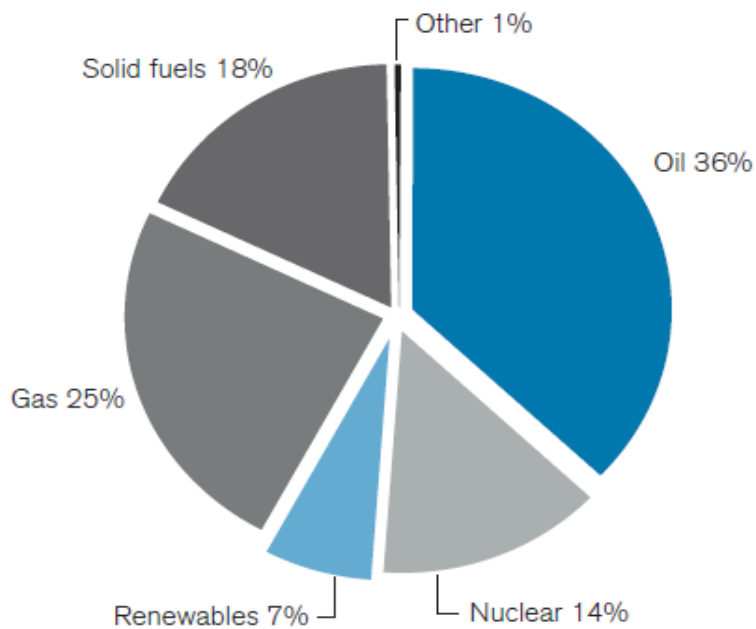


According to "The EU 2020 Renewable Energy Directive" from the **University of Kent** "Analysis of the flexible support mechanisms in the Directive on the promotion of the use of energy from renewable sources" **The Nordic Working Group for Renewable Energy** - Final Report 8th January 2010

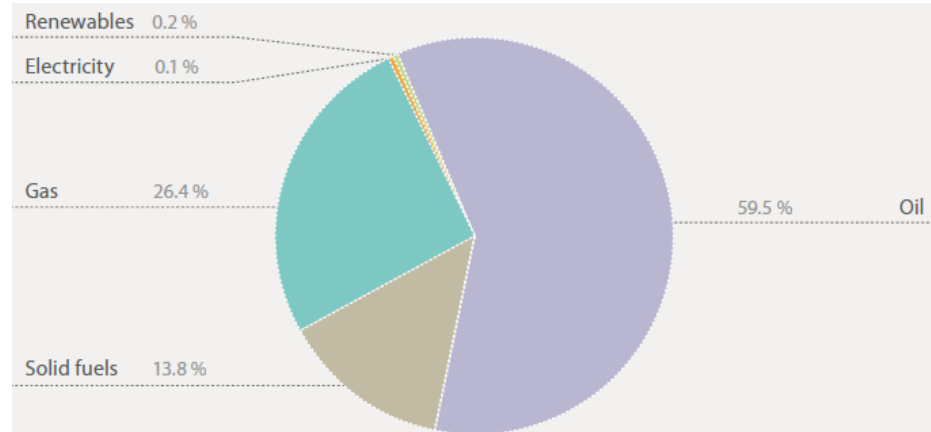


The EU currently imports more than half of its energy needs

EU Energy Consumption



Net Imports of Energy by Source





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So, what about Georgia HIPP?

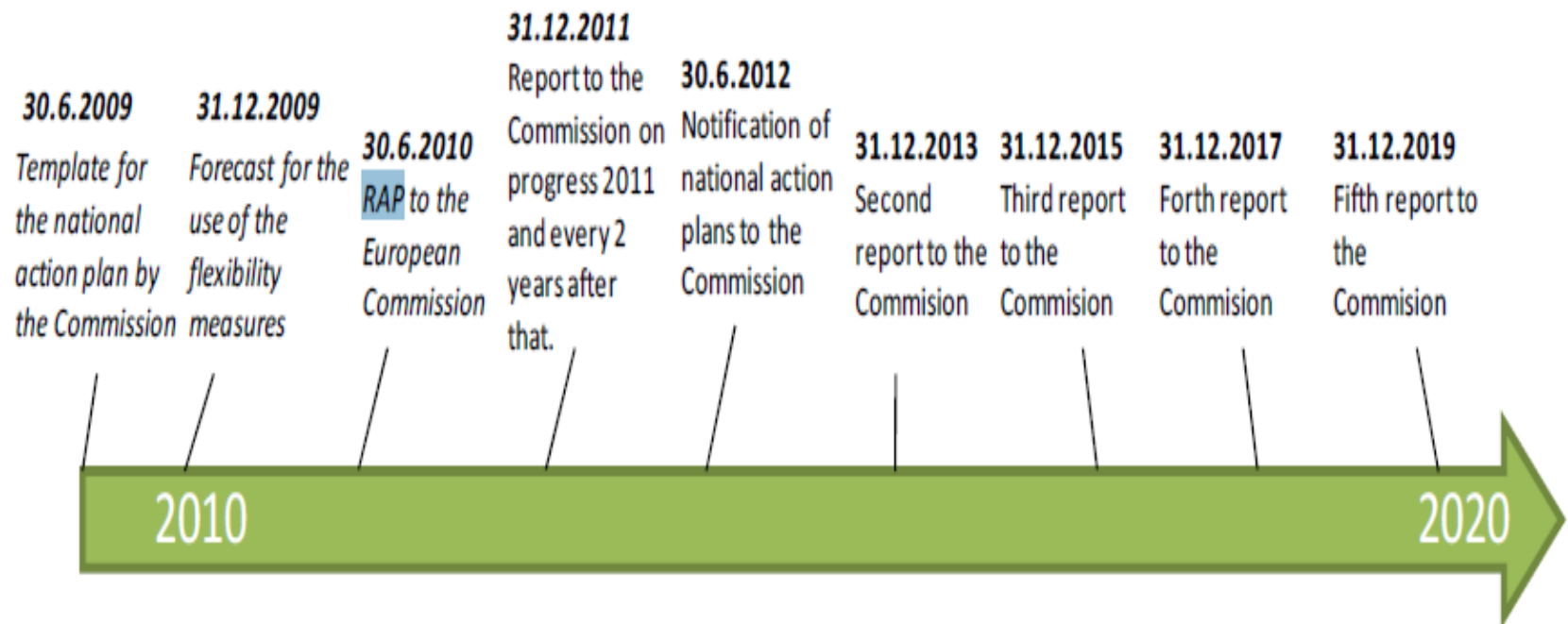
Two ways the EU has encouraged renewable energy growth

- support schemes
- measures of cooperation between different Member States and with **third countries** for achieving their national overall targets

‘Support scheme’ means any instrument, scheme or mechanism applied by a Member State or a group of Member States, that promotes the use of energy from renewable sources by reducing the cost of that energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased. This includes, but is not restricted to, investment aid, **tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and premium payments;**



How can we target countries who needs renewable energy?





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National Renewable Energy Action Plan (NREAP)

- National targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020 taking into account the effects of other policy measures relating to energy
- Efficiency on final consumption of energy, and adequate measures to be taken to achieve those national overall targets, including co-operation between local, regional and national authorities
- Planned statistical transfers or joint projects, national policies for transfer of energy between **member and third countries**
- Plans to develop existing biomass resources and mobilize new biomass resources for different uses



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Biyearly country report to the EU Commission

Items that must be described in the report

- Describe the means by which private entities can propose and take part in joint projects with either Member States or third countries.
- Are you aware of potential for joint projects in other Member States or in third countries? *(In which sector? How much capacity? What is the planned support? For which technologies?)*

EU has created an online public Transparency Platform



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How can Georgia sell hydro-energy?

Agreements with third countries concerning the organization of such trade in electricity from renewable energy sources will be considered.

1. To count towards renewable energy in the country it is consumed, the energy must be accompanied by a Guarantee of Origin (GO).
2. The energy must come from a source that follows EU mandates per Directive 2009/28EC



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What is a GO?

Guarantee of Energy (GO)

- Serves as a guarantee that the specified quantity of electricity was generated from renewable sources.
- May be traded

A GO must :

- Specify the energy source(s) from which the electricity was generated, the dates and place of production, and in the case of hydro-electricity, the capacity of the plant;
- Serve to enable producers of electricity from renewables to demonstrate that the electricity they sell is produced from renewable sources as defined by the Directive;
- Should be mutually recognized by Member States, and any refusal to recognize should be based on objective, transparent and nondiscriminatory criteria (i.e. fraud).

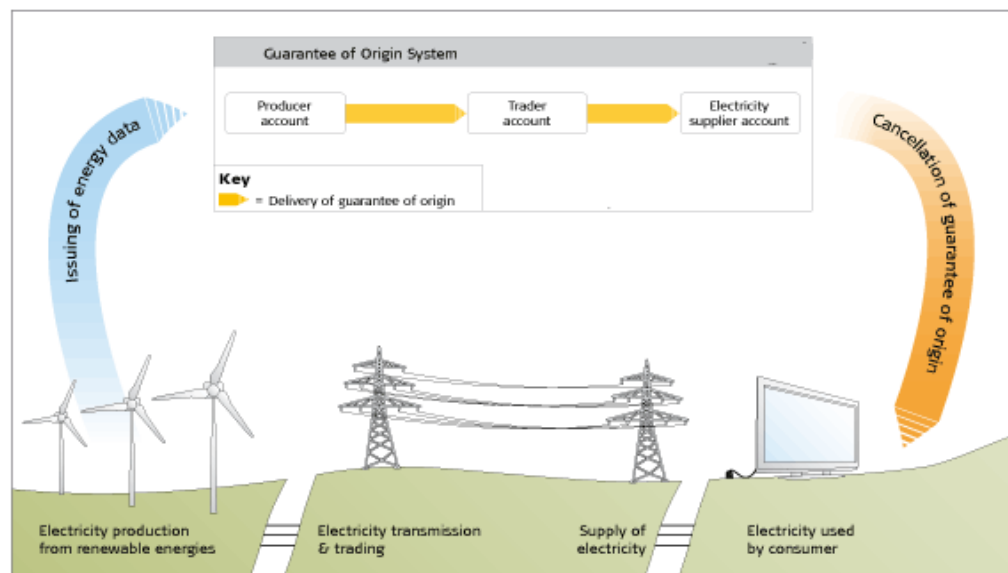
A GO must contain:

- the energy source and the dates and place of production (i.e. name of generating station);
- in the case of electricity generated from hydroelectricity, the GO should also indicate the capacity (i.e. declared net capacity) of the generating station.



What is a GO?

Life cycle of the guarantee of origin



- Whether and to what extent the installation has benefited from investment support, whether and to what extent the unit of energy has benefited in any other way from a national support scheme, and the type of support scheme
- The date on which the installation became operational;
- The date and country of issue and a unique identification number.



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How to get a GO?

- Each Member State shall submit a report to the Commission on progress in the promotion and use of energy from renewable sources by **31 December 2011**, which will determine the functioning of the system of guarantees of origin for electricity and heating and cooling from renewable energy sources and the measures taken to ensure the reliability and protection against fraud of the system
- **Each Member State is responsible for issuing of GO** to generators within its own jurisdiction or for renewable energy consumed in its jurisdiction that is imported from third countries
- There has been **no reached agreement on a harmonized electronic Guarantee of Origin**. The initiative for a the approval of individual member state Guarantee of Origin registration systems and the harmonized system of Guarantee of Origin will not be launched before the national schemes have been evaluated in 2011 and stakeholders have been consulted. (*European Parliament Commission Staff Working Paper - **Energy Efficiency Plan 2011**, August 3, 2011*)



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GO requirements per submitted 2011 member state reports

- Only the reports of four countries have been publicized (Slovenia, UK, Ireland, Denmark)
- As of 2008, Hungary had no framework for the implementation of GO recognition or certification



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Slovenia GO application template

Applicant must provide:

- Identification number of the facility,
- The period during which the electricity, which wishes to obtain a certificate of origin is produced: from and including (date) to (date)
- The quantity of electricity produced in this period.

Detailed content requirements for issuing certificates of origin of the Agency for Energy.

When combined production facilities must be required include:

- Share of total electricity production, which was created in a manner that is issued a certificate of origin for electricity;
- The amount of all electricity produced;
- Data on fuel consumed in the period to which the application relates.

Energy Agency shall, within ten working days after receipt of the request of the owner or operator of a facility to produce electricity required to issue a certificate of origin.

- FREE



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UK GO application template

1. The name and address of the person requesting the issue of the guarantee of origin (if a body corporate, the registered or principle office) and, if a company, its registered number.
2. Where the person signing the statement required under regulation 4(5) is not the person making the request, the name and address of the person signing the statement.
3. The energy source from which the electricity (for which the guarantee of origin is requested) was produced.
4. The start and end dates of production of the electricity (for which the guarantee of origin is requested).
5. The name (if any), location, type and capacity of the installation where the electricity (for which the guarantee of origin is requested) was produced.
6. Whether and to what extent the installation specified in paragraph 5 has benefited from investment support through any support scheme and, if so, the name of the scheme.
7. Whether and to what extent the electricity for which the guarantee of origin is requested has benefited from any United Kingdom support scheme (other than that specified in paragraph (6) and, if so, the name of the scheme.
8. The date on which the installation specified in paragraph 5 became operational.
9. The quantity of electricity in respect of which the guarantee is requested, together with the total quantity of electricity produced by the installation during the period referred to in paragraph 4.
10. Such further information or evidence as the Authority may, in the particular circumstances of the case, reasonably require for the purpose of ascertaining the accuracy of the information required to be provided under paragraphs 1 to 9 above or to enable it to be satisfied that any energy source specified in paragraph 3 is a renewable energy source.



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GO's are valuable, even without energy

Guarantees of origin issued for the purpose of this Directive have the sole function of proving to a final customer that a given share or quantity of energy was produced from renewable sources. **A guarantee of origin can be transferred, independently of the energy to which it relates, from one holder to another.** However, with a view to ensuring that a unit of electricity from renewable energy sources is disclosed to a customer only once, double counting and double disclosure of guarantees of origin should be avoided. Energy from renewable sources in relation to which the accompanying guarantee of origin has been sold separately by the producer should not be disclosed or sold to the final customer as energy from renewable sources.



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EU mandates per Directive 2009/28EC for third countries

- a) The electricity is consumed in the Community, a requirement that is deemed to be met where:
 - i. an equivalent amount of electricity to the electricity accounted for has been firmly nominated to the allocated interconnection capacity by all responsible transmission system operators in the country of origin, the country of destination and, if relevant, each third country of transit;
 - ii. an equivalent amount of electricity to the electricity accounted for has been firmly registered in the schedule of balance by the responsible transmission system operator on the Community side of an interconnector; and
 - iii. the nominated capacity and the production of electricity from renewable energy sources by the installation referred to in paragraph 2(b) refer to the same period of time;
- b) The electricity is produced by a newly constructed installation that became operational after 25 June 2009 or by the increased capacity of an installation that was refurbished after that date
- c) The amount of electricity produced and exported has not received support from a support scheme of a third country other than investment aid granted to the installation.



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That's it?

The proportion or amount of electricity produced by any installation in the territory of a third country, which is to be regarded as counting towards the national overall target of one or more Member States for the purposes of measuring compliance with Article 3, shall be notified to the Commission. When more than one Member State is concerned, the distribution between Member States of this proportion or amount shall be notified to the Commission. This proportion or amount shall not exceed the proportion or amount actually exported to, and consumed in, the Community, corresponding to the amount referred to in paragraph 2(a)(i) and (ii) of this Article and meeting the conditions as set out in its paragraph (2)(a). The notification shall be made by each Member State towards whose overall national target the proportion or amount of electricity is to count

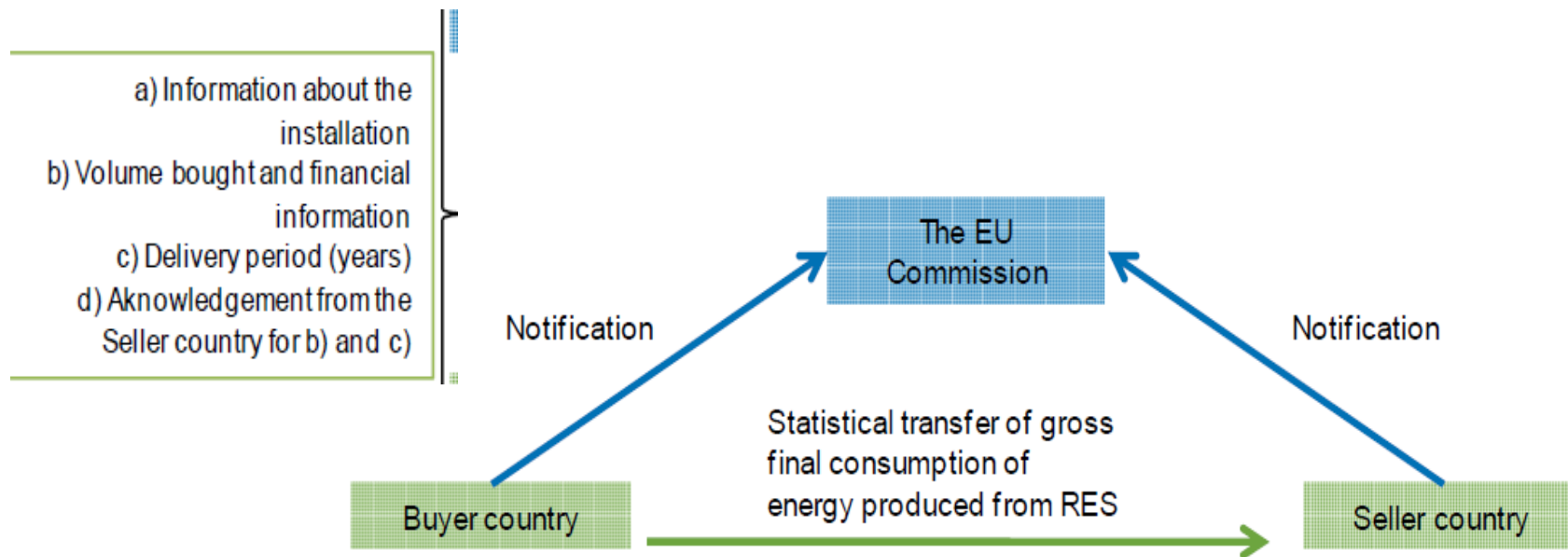
The notification referred to in paragraph 4 shall:

- a) describe the proposed installation or identify the refurbished installation;
- b) specify the proportion or amount of electricity produced from the installation which is to be regarded as counting towards the national target of a Member State as well as, subject to confidentiality requirements, the corresponding financial arrangements;
- c) specify the period, in whole calendar years, during which the electricity is to be regarded as counting towards the national overall target of the Member State; and
- d) include a written acknowledgement of points (b) and (c) by the third country in whose territory the installation is to become operational and the proportion or amount of electricity produced by the installation which will be used domestically by that third country.



What Else?

The EU Commission must be notified on the amount and price of transfer latest three months after the end of the year in which the transfer takes effect. The transfer becomes effective only after all countries have provided their notifications to the Commission.





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Something good?

Priority access and guaranteed access for electricity from renewable energy sources are important for integrating renewable energy sources into the internal market in electricity, in line with Article 11(2) and developing further Article 11(3) of Directive 2003/54/EC. (*A Member State may require the system operator, when dispatching generating installations, to give priority to generating installations using renewable energy sources or waste or producing combined heat and power.*)



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What if we can't get the power there?

Member States may apply to the Commission, for the purposes of Article 5, for account to be taken of electricity from renewable energy sources produced and consumed in a third country, in the context of the construction of an interconnector with a very long lead-time between a Member State and a third country if the following conditions are met:

- a) construction of the interconnector started by 31 December 2016;
- b) it is not possible for the interconnector to become operational by 31 December 2020;
- c) it is possible for the interconnector to become operational by 31 December 2022;
- d) after it becomes operational, the interconnector will be used for the export to the Community, in accordance with paragraph 2, of electricity generated from renewable energy sources;
- e) the application relates to a joint project that fulfills the criteria in points (b) and (c) of paragraph 2 and that will use the interconnector after it becomes operational, and to a quantity of electricity that is no greater than the quantity that will be exported to the Community after the interconnector becomes operational.



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Summary: Pros/Cons

Benefits:

- EU forecasted to require imported renewable energy to meet 2020 goals
- EU encourages cooperation with third countries (Georgia) to meet 2020 goals
- Bi-yearly reports can help hydropower market target markets in need
- GO's are able to be traded
- Priority and guaranteed access for renewable electricity transfers in some EU states
- Hydropower from Georgia valuable to member states even without existing transmission lines
- Georgia can achieve benefits from the EU Renewable Energy Directive

Risks:

- No blanket universal accreditation for the Georgian hydropower industry
- Uncertainty on exact requirements to receive a guarantee of origin
- Power generated from Georgian plants existing prior to June 25, 2009 does not count towards renewable energy
- Hydropower in Georgia that do not meet EU criteria may become less valuable
- Restrictions on support schemes for third countries



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Further Possible Exploration

Joint projects between EU member states

The Directive also enables one or more Member State to cooperate with one or more third country in all types of joint projects regarding *the generation of electricity* from renewable sources. A prerequisite to the acceptability of the project is that the electricity produced within the project must be consumed in the Community area where a gain occurs and includes a larger set of conditions than the transfer of energy.

Benefits from trading in carbon credits

EECS –European Energy Certificate System & the AIB (Association of Issuing Bodies)



Selected References

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- **COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Energy Efficiency Plan 2011**
- **Making Guarantees of Origin and Electricity Disclosure in Europe more reliable** http://www.reliable-disclosure.org/static/media/docs/RE-DISS_1st-Domain_Workshop_Minutes_Public.pdf
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