



# EUROPEAN GRID DECLARATION

**On Electricity Network  
Development and Nature  
Conservation in Europe**

**Selected implementation cases**

Renewables   
Grid Initiative

## **Imprint**

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## **The Renewables-Grid-Initiative & the European Grid Declaration**

The **Renewables-Grid-Initiative (RGI)** was launched in July 2009 by a coalition of Transmission System Operators (TSOs) and Non-Governmental Organisations (NGOs) and has grown to 13 members across Europe today. RGI promotes the integration of renewable energy sources into the European electricity network.

In November 2011, RGI brought together a coalition of 24 organisations, including nine of Europe's largest TSOs, and NGOs such as WWF, Greenpeace, Birdlife International and Friends of the Earth Europe in signing the "European Grid Declaration on Electricity Network Development and Nature Conservation" (EGD).

The EGD sets out principles for environmentally sensitive grid development planning and reducing the impacts of existing power lines on biodiversity. This includes seeking innovative solutions that integrate nature and biodiversity considerations into the design and development of transmission infrastructure.

## **Implementing the European Grid Declaration**

Timely grid development is critical if the European electricity network is going to accommodate the large volume of renewable energy sources needed to combat climate change and ensure a secure and reliable supply of electricity. By signing the European Grid Declaration, nine Transmission TSOs across Europe have made a commitment to modernise and expand the European electricity network while striving towards a high level of protection for biodiversity and ecosystems.

This leaflet provides examples of how the Declaration is being implemented by TSOs, in many cases working together or in cooperation with local environmental NGOs. The aim is to raise awareness of these projects, to share learning and good practice, and to encourage other organisations to get involved.

## Case Studies

### TenneT – "Bird Flaps" for New 380 kV Overhead Lines: 70% Less Victims



TenneT has extensively studied the impacts on flora and fauna from the 380 kV connection that will be built in Randstad, the western part of the Netherlands. One specific study by a consultancy has provided valuable information on the effectiveness of bird flight diverters or so-called "bird flaps". The research was conducted along an existing 150 kV power-line near the Natura2000 area of "De Wilck". It included both an inventory of collision victims and a field study on bird flight behaviour near the overhead lines. In the summer of 2009 RIBE flag fittings were installed in the existing 150 kV line. The comparison of birds that have fallen victim to collision before and after the installation demonstrated a reduction of victims by 70%.

Moreover, the bird flaps have a positive effect on a number of species that particularly fly at night such as ducks. Nonetheless, within Europe, bird flaps are being used only in very limited cases.

In the Netherlands, the study has led to the decision that exact locations of bird flaps on new 380 kV overhead lines must be determined before their construction and legally defined in the spatial plan.

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**Section in the EGD:** 5.5

### Elia – Forest Management Plan Oost-Limburg



A proposed second circuit installation in Oost-Limburg passes through one, and close to several other, Special Protection Areas and Special Areas of Conservation. Linked to the installation of the second circuit, Elia will be developing a Forest Management Plan. This will aim to increase the ecological value of the overhead-line corridor and decrease maintenance costs.

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**Section in the EGD:** 3.1.1

# Habitat Restoration and Creation



Belgian TSO Elia, French TSO RTE, the Walloon Government and local NGOs undertook a project looking at opportunities for habitat restoration and creation in

forests along 130 km of existing power-lines, supported by funding from the European Commission's LIFE+ programme.



In the project, Elia and RTE changed the way they manage woodlands under and directly adjacent to power-lines. Instead of using a rotary mulcher every five to eight years to clear the forest, which results in a loss of habitat and high costs for the

TSO, they will create new habitats under the lines – such as peat bogs, thickets, meadow and pasture. These areas will be easier and less costly to maintain, and more favourable to biodiversity.

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**Section in the EGD:** 3.1.1, 3.1.2

## Statnett – Reducing Total Impact by Removing Old Power Lines

When need for a new power line arises, Statnett always takes a closer look at the total grid in the region, including the regional transmission grid. Together with the regional grid owner, Statnett tries to find solutions which avoid a big increase in the total number of transmission line kilometers. For the connection between Ørskog and Sogndal, Statnett builds 285 km of new power-line to connect renewable production to consumers and to secure power supply in mid Norway. Due to an investment in seven new sub stations, 170 km of existing power-lines will be removed. This is the result of several years of cooperation and a licensing process consulting stakeholders such as local communities, land owners, municipalities, industry, grid owners, power producers and regional NGOs.

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**Section in the EGD:** 4.3.2.

## 50Hertz – Study on Ecological Management of Overhead Power Lines

50Hertz produced a study with the Erfurt Technical Institute and other partners, co-financed by the EU, called ‘An interdisciplinary approach to an ecological management concept for overhead line corridors for high and very high voltage lines, which can be adapted and applied to the conditions of various European regions’. The concept they developed aims to minimise the impact on landscapes and combines aspects of intervention prevention, intervention minimisation and ecological compatibility resulting from corridor creation and maintenance. The study includes proposals for site-appropriate sustainable overhead-line corridor management, orientated towards ecological and social objectives. These proposals follow the example of the 380 kV southwest link line in the Thuringian Forest region.

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**Section in the EGD:** 3.3.2

## Terna’s Collaboration with WWF Italy

In 2009, Italian TSO Terna and WWF Italy signed a three-year co-operation agreement focused on more sustainable development of the Italian grid and reduction of the environmental impacts of grid infrastructure. A working group was established to enable ongoing dialogue on:

- Integration of environmental criteria into the development plan for the national electrical grid (guidelines); and,
- An action plan to mitigate impacts in priority areas such as national parks and in WWF protected areas.



WWF Italy and Terna have been working together on projects within three of WWF’s protected areas. Projects include reducing the impacts on birds by putting up anti-collision spirals on power-lines and placing nest boxes on pylons, increasing opportunities to monitor the area, delivering environmental education activities and promoting the measures taken.

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**Section in the EGD:** 3.1.1, 3.4.4

## RTE Involvement in the National Biodiversity Strategy

One of the overarching principles of the EGD is to support the delivery of the European Biodiversity Strategy, including its commitment to halt the loss of biodiversity by 2020.

In May 2011, French TSO RTE signed a letter of commitment to the revised French National Strategy for Biodiversity.

RTE produced an Action Plan setting out how it would preserve and restore biodiversity through its operations. Actions include experimentation with, and implementation of, new vegetation management techniques under existing power-lines in order to preserve or restore biodiversity such as grazing, restoration of ponds and the growth of shrubs.

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**Section in the EGD:** 3.1.2



## National Grid – Efforts to Minimise New Corridor Development As Far As Possible

When new sources of generation wish to connect to the transmission system, National Grid looks first at ways in which the additional power can be accommodated without building new lines, but sometimes new routes are needed. On a project where a new line is needed for a mix of new energy sources, including offshore wind farms (Bramford to Twinstead) the options taken forward to the next stage of project development involve the removal of 132kV distribution lines to make way for the new 400kV connection within existing power infrastructure corridors. This choice has been very much informed by several years spent identifying and evaluating options and analysing feedback from consultations with stakeholders and the public, through workshops, public information events, specific consultations, thematic group meetings and community forums. By working closely with the Distribution Network Operators, local supply connections can be maintained and the overall impact of new transmission connections can be minimised.

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**Section in the EGD:** 4.3.2



## TenneT – Realisation of 380 kV Underground Cables in the Ecologically Sensitive Zuidpolder van Delfgauw

In the densely populated western part of the Netherlands (Randstad), urban areas and nature compete for the available space. In 2007, residents and interest groups were unhappy with the new lines that are necessary to safeguard security of supply and to integrate RES feed in the future. TenneT was urgently requested to build the line underground. Extensive research showed that with the current technical know-how, it was possible to realise a maximum of 20 km of underground 380 kV cables in the Dutch system. In the summer of 2012 the cables were installed and in October 2012 the first tests were successfully run. Ongoing research will take place regarding technical and operational feasibility of cable connections with this capacity (2640 MW) covering such long lengths within meshed 380 kV transmission grids. For this purpose, an international research programme was set up (Universities of Technology Delft and Eindhoven).



The choice for the location of the cables was partly determined by the presence of an ecologically sensitive area (Zuidpolder van Delfgauw) and its surrounding valuable landscape.

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**Section in the EGD:** 3.5

## Swissgrid – Early Cooperation with Environmental NGOs

As an element of transparent and open communication, Swissgrid invited representatives of the most important Swiss NGOs to participate in general discussions on grid development. One aim of this meeting was to evaluate possible future collaborations. Greenpeace, WWF, Pro Natura and the Swiss Energy Foundation attended the meeting, during which Swissgrid presented not only future challenges as owners of the transmission system, but also the commitment within the framework of RGI's European Grid Declaration.

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**Section in the EGD:** 3.2.1

## Elia & Terna – Both Working with NGOs to Increase Knowledge

Elia has commissioned a study from several NGOs on “Reducing bird mortality with high and very high voltage power lines in Belgium”. The study assesses the most important bird areas and flight patterns in Belgium and makes suggestions on how current overhead lines owned by Elia (among others) can be adapted.

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In 2009, Italian TSO Terna commissioned a scientific study on the interaction between high voltage lines and birds in partnership with LIPU, the Italian partner of BirdLife Europe. The study monitored seven areas within Natura2000 sites and the risk of collision of birds with power lines. This was the first time this had been monitored in a systematic and large-scale way.

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**Section in the EGD:** 3.3.2

## RTE – Working Together with NGOs for Birdlife Protection

The overarching principles of the EGD include cooperation to find joint solutions, and to share monitoring and learning experiences. French TSO RTE, together with the Ligue de Protection des Oiseaux (LPO), France Nature Environnement (FNE) and ERDF (French DSO) established the "Comité National Avifaune" (CNA – French National Birdlife Committee) in 2004. Meetings are held quarterly in order to identify and promote good practice on bird protection and to mediate conflicts that arise locally from specific grid lines. The NGOs and RTE both state that this committee helps to establish an environment of cooperation. In addition, a bi-annual newsletter, named "Oiseaux et lignes électriques" (Birds and power-lines) is edited by the CNA for employees of the partner organisations.

In order for the NGOs to have the capacity to get more heavily involved, RTE and ERDF agreed in September 2011 to fund a full-time employee for three years, supervised by LPO. This post is focused exclusively on resolving issues regarding birds and RTE/ERDF infra-structures and collecting examples of best practice.

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**Section in the EGD:** 3.2.4

## 50Hertz – Creation of Five Small Lakes in the Siebendorfer Moor Landscape Protection Area

Siebendorfer Moor is located near Schwerin, the regional capital of Mecklenburg-West Pomerania. To compensate for some of the disruption caused by erecting the 380 kV overhead line linking Krümmel and Görries, 50Hertz has reinstated an area covering 10 ha, creating new habitats and improving sites used by migrating birds. The creation of five new lakes (total investment: EUR 100,000) returns some of the original character to the Siebendorfer Moor area and provides new habitat for cranes, ground-nesting birds and other wildlife. This area is an extremely important stopover for migrating birds and as a nesting site for sea eagles and bitterns in particular.



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**Section in the EGD:** 4.3.3

## About RGI

The **Renewables-Grid-Initiative (RGI)** promotes 100% integration of electricity produced from renewable energy sources. TSOs and NGOs join forces in RGI to support the build-up of a sufficient grid infrastructure in Europe for both decentralised and large-scale renewable energy sources. This grid development should be efficient, sustainable, timely, environmentally friendly, and socially acceptable to all stakeholders.

[www.renewables-grid.eu](http://www.renewables-grid.eu)

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# RGI PARTNERS

