# TRANS-EUROPEAN ENERGY NETWORKS

#### POLICY AND ACTIONS OF THE EUROPEAN COMMUNITY

EC LEGISLATION	4
EC GUIDELINES	5
Objectives	5
Priorities	6
Identification of projects of common interest	6
Creation of a favourable context	7
EC FINANCIAL SUPPORT	
TO PROJECTS	8
Financial instruments	8
Rules for granting financial support	
from the TEN budget line	9
THE EXTERNAL DIMENSION	11
Relevance of energy networks	
in third countries	11
Present situation of energy interconnections	
with third countries	12
Energy network projects in third countries	13
<ul> <li>Financing of energy network projects in third countries</li> </ul>	13
Creating a favourable investment climate	13
in third countries	14
THE PROJECTS	
OF COMMON INTEREST	15
(Descriptions and maps)	
Electricity networks	16-29
Natural gas networks	30-41

# EC LEGISLATION

#### **■ THE TREATY ESTABLISHING THE EUROPEAN COMMUNITY**

(Title XII comprising Articles 129B, 129C and 129D)

- Article 129B sets out the objectives of Community action:
  - contributing to the establishment and development of trans-European networks in the areas of transport, telecommunications and energy infrastructures.
  - aiming at promoting the interconnection and interoperability of national networks as well as access to such networks,
  - taking account in particular of the need to link island, landlocked and peripheral regions with the central regions of the Community.
- Article 129C refers to the means for implementing the above objectives, in particular the establishing of guidelines, and community financial support.
- Finally, article 129D sets out the procedures for carrying out these measures.

# THE <u>GUIDELINES</u> FOR THE DEVELOPMENT OF ENERGY TENS (SEE PAGES 5, 6 AND 7)

- Objectives, priorities and identification of projects of common interest:

  Decision n° 1254/96/EC of the European Parliament and of the Council of
  5 June 1996 (O.J. L 161 of 29.6.1996), amended by Decision n° 1047/EC of
  the European Parliament and the Council of 29 May 1997 (O.J. L 152 of
  11.6.1997).
- Creation of a favorable context for the development of energy TENs:
   Council Decision n° 96/391/EC of 28 March 1996 (O.J. L 161 of 29.6.1996).

# THE <u>RULES FOR GRANTING FINANCIAL SUPPORT</u> IN THE FIELD OF TENS (SEE PAGES 9 AND 10)

Council Regulation (EC) N° 2236/95 of 18 September 1995 (O.J. L 228 of 23.9.1995).

# EC GUIDELINES

In accordance with Article 129C of the Treaty, the European Community has established a series of guidelines on trans-European Energy Networks covering:

- OBJECTIVES AND PRIORITIES
- LINES OF ACTION, INCLUDING THE IDENTIFICATION OF PROJECTS OF COMMON INTEREST

These guidelines concern the main transportation networks for electricity and natural gas

#### ■ ELECTRICITY NETWORKS

- high voltage lines
- submarine links
- protection, monitoring and control systems

#### NATURAL GAS NETWORKS

- high pressure gas pipelines
- underground storage facilities
- reception, storage and regasification facilities for liquified natural gas (LNG)
- protection, monitoring and control systems

Distribution networks are not covered by the guidelines for trans-European Energy Networks.

#### **OBJECTIVES**

The aim of Community action for the development of Energy TENs is to contribute to:

- effective operation of the <u>Internal Market</u> in general, and of the <u>Internal Energy Market</u> in particular.
- strengthening <u>Economic and Social Cohesion</u> by reducing the isolation of the less-favoured regions of the Community.
- reinforcing Security of Energy Supply.

#### **PRIORITIES**

Community action for the development of Energy TENs addresses the following priorities:

#### FOR ELECTRICITY

- Connection of isolated networks
- Improvement of the interconnections between Member States
- Improvement of internal connections within the Member States associated with improvement of the interconnections between themselves
- Establishment or improvement of interconnections with third countries

#### FOR NATURAL GAS

- Introduction of natural gas into new regions
- Connection of isolated or separate gas networks
- Increasing transport, reception and storage capacities for liquified natural gas (LNG); increasing underground storage capacity
- Construction of new delivery pipelines or upgrading of pipeline capacity

#### **IDENTIFICATION OF PROJECTS OF COMMON INTEREST**

A project may be of common interest if it:

- corresponds to the objectives and priorities
- displays potential economic viability

The inclusion of a project in the list of projects of common interest is without prejudice to the assessment of its environmental impact.

The projects of common interest identified to date are listed on pages 16,17 and 18, for electricity, and on pages 30, 31 and 32 for natural gas.

#### CREATION OF A FAVOURABLE CONTEXT

The	Euro	pean	Com	munity
1110	Luio	pean	COIII	mumiy

- will promote <u>technical cooperation</u> projects between the operators responsible for the management, monitoring and control of the trans-European energy networks;
- will promote cooperation between Member States with a view to easing <u>authorisation procedures</u> for projects on trans-European energy networks in order to reduce delays;
- can provide <u>financial support</u> for projects of common interest from the budgetary resources earmarked for the TEN policy, under the rules defined by the relevant Council Regulation (see following pages) and
- will take account of the projects of common interest in the financial interventions by its <u>Funds</u>, <u>instruments and programmes</u>.

In implementing the above measures, the Commission is assisted by a Committee composed of the representatives of the Member States and chaired by the representative of the Commission.

# EC FINANCIAL SUPPORT

#### FINANCIAL INSTRUMENTS

There are several European Community financial instruments which may come into play where appropriate and in accordance with the specific rules governing each of them.

#### ■ THE TEN BUDGET LINE

This budget line is managed in accordance with Council Regulation (EC) N°2236/95 (see details on pages 9 and 10).

#### **■ THE STRUCTURAL FUNDS**

The European Regional Development Fund (ERDF) contributes to the financing of the trans-European Energy Networks because of their role in the development of eligible regions.

Funds are allocated from:

- the Community Support Frameworks (CSF) and
- the Community initiatives (REGEN, INTERREG II).

#### THE PHARE, TACIS AND MEDA PROGRAMMES

So far (July 1997), the PHARE and TACIS programmes have financed several East-West and regional interconnection studies relating to energy networks in or linked to eligible countries (see section on financing of energy network projects in third countries on page 13).

### **■ EUROPEAN INVESTMENT BANK (EIB) LOANS**

The EIB finances, usually by meeting up to 50% of the total cost, many TEN Energy projects with the aim of contributing to the Community's TEN policy.

#### ■ EUROPEAN COAL AND STEEL COMMUNITY (ECSC) LOANS

Some trans-European Energy networks consuming Community steel have benefited from ECSC loans.

#### **■ EUROPEAN INVESTMENT FUND (EIF) LOAN GUARANTEES**

The main purpose of the EIF (funded 40% by the EIB, 30% by the Commission and the remaining 30% by banks and other financial institutions) is to grant guarantees for loans concerning TEN projects.

The EU financial support decided so far (July 1997) for the different projects of common interest is indicated on pages 20, 22, 24 and 26 for electricity, and on pages 34, 36 and 38 for natural gas.

#### **RULES FOR GRANTING FINANCIAL SUPPORT FROM THE TEN BUDGET LINE**

#### **RESOURCES - FORMS OF AID - RESTRICTIONS**

#### RESOURCES OF THE ENERGY TEN BUDGET LINE

- For energy networks projects: A total of 112 MECU is planned for the period 1995-99.
- An amount of 29 MECU has already been committed so far (September 1997), for the co-financing of feasibility studies.

#### FORMS OF AID FOR ENERGY TEN PROJECTS

- Generally, co-financing of feasibility studies
- In duly justified cases, support to investment by means of interest-rate subsidies, contributions to fees for guarantees for loans, or direct grants

#### RESTRICTIONS

- Aid to feasibility studies limited in general to a maximum of 50% of the cost
- Maximum period of interest-rate subsidy shall not generally exceed 5 years
- Total amount of financial support from the TEN budget line shall not exceed 10% of the total investment cost
- EC financial support should not distort competition

#### **RULES FOR GRANTING FINANCIAL SUPPORT FROM THE TEN BUDGET LINE**

(continued)

#### **ELIGIBILITY AND SELECTION**

#### **ELIGIBILITY**

■ The projects of common interest identified by the Community guidelines on trans-European Energy Networks

#### SELECTION CRITERIA

- The degree of contribution to the objectives and priorities
- Projects should be potentially economically viable but have insufficient financial profitability
- The maturity of the project
- The stimulative effect of the Community support
- The soundness of the financial package
- The socio-economic effects
- The environmental consequences

#### SUBMISSION OF APPLICATIONS

Applications are submitted to the Commission:

- through the intermediary of the Member State concerned, or
- by the body directly concerned, with the agreement of the Member State

#### APPROVAL OF REQUESTS

By the Commission, assisted by a Committee of representatives of the Member States.

# THE EXTERNAL DIMENSION

The Commission has presented to the European Parliament and the Council of Ministers a communication dealing with the external dimension of the Energy TENs (Ref. COM(97) 125 final of 26.3.1997).

#### RELEVANCE OF ENERGY NETWORKS IN THIRD COUNTRIES

#### **■ TO THE EUROPEAN COMMUNITY:**

- Access to energy resources and diversification of supply
- Downward pressure on energy prices through competition
- Integration of the candidate third countries
- Trade and industrial cooperation
- Social and economic cohesion in a wider geographical area

#### ■ TO THE THIRD COUNTRIES CONCERNED:

- Access to energy resources and diversification of supply
- ▶ Improved operation of energy networks
- Revenues from exports of energy products and services
- Contribution to political stability and economic reforms

#### PRESENT SITUATION OF ENERGY INTERCONNECTIONS WITH THIRD COUNTRIES

#### **■ ELECTRICITY**

- EXISTING INTERCONNECTIONS:
  - Norway with Denmark and Sweden
  - Finland with Russia
  - CENTREL with UCPTE
  - Greece with some neighbouring countries

#### MISSING LINKS:

- Baltic States with NORDEL and with UCPTE/CENTREL
- Balkan countries with UCPTE/CENTREL
- Eastern European countries with extended UCPTE
- Mediterranean countries with extended UCPTE

#### NATURAL GAS

- EXISTING INTERCONNECTIONS:
  - Finland with Russia
  - Western Europe with Russia (mainly through Ukraine and Slovakia)
  - Greece with Russia (through Ukraine, Romania and Bulgaria)
  - Italy and Spain/Portugal with Algeria
  - LNG terminals in the EC (receiving mainly Algerian gas)

#### MISSING LINKS:

- Baltic States with Nordic and Central Europe
- Balkan countries with Central Europe and with Mediterranean basin
- Europe with Central Asia, by a Southern route

#### **ENERGY NETWORK PROJECTS IN THIRD COUNTRIES**

#### PROJECTS OF MUTUAL INTEREST

- Those projects of common interest involving at the same time at least one EC Member State and one third country.
- Identification: done under the guidelines decisions. (see descriptions and maps on pages 28 and 29 for electricity networks and pages 40 and 41 for natural gas networks).

#### PROJECTS OF REGIONAL INTEREST

- Energy network projects being of interest to two or more third countries.
- ▶ Identification: ongoing

(through the various studies, cooperation groups and task forces set up at the levels of the industries or of the Governments, with support from the EC programmes

SYNERGY, PHARE, TACIS and MEDA).

Areas concerned: Baltic, Central Europe, Balkans, Black Sea, Central Asia and Mediterranean.

#### FINANCING OF ENERGY NETWORK PROJECTS IN THIRD COUNTRIES

#### FINANCING OF STUDIES

Aid for the financing of feasibility and other studies may come from:

- the TEN programme budget line, for projects of *mutual interest*;
- the PHARE, TACIS, MEDA programmes, for projects of *regional interest*.

#### FINANCING OF INVESTMENT

- Projects have to show potential economic viability
- In general, project financing is for the network operators using their own or borrowed funds
- Additional financial support may come from:
  - The PHARE programme: aid for projects having strong structural/regional impact
  - The EIB for loans and the EIF for loan guarantees
  - Other international financial institutions such as the EBRD and the World Bank

#### **CREATING A FAVOURABLE INVESTMENT CLIMATE IN THIRD COUNTRIES**

#### ■ IMPLEMENTATION OF THE ENERGY CHARTER TREATY

- Rules for investment in the energy sector
- Guaranteeing investment security
- Securing transit on energy networks

#### **■ IMPLEMENTATION OF COHERENT ENERGY POLICIES**

- Considerations for network operators:
  - Level of state involvement
  - Level of unbundling of activities
  - Rules for access to the network
- Introduction of energy tariffs reflecting costs
- Promotion of energy efficiency

# ■ IMPLEMENTATION OF OTHER POLICIES AND MEASURES AFFECTING ENERGY

- Taxation of energy products
- Environmental rules for energy products and facilities
- Administrative authorisations for the construction of energy infrastructure

# THE PROJECTS OF COMMON INTEREST

# **DESCRIPTIONS AND MAPS**

#### ■ ELECTRICITY

LIST OF PROJECTS OF COMMON INTEREST AND GENERAL MAP	16-19
NORTH - WEST EUROPE NORTH - EAST EUROPE SOUTH - WEST EUROPE SOUTH - EAST EUROPE	20-21 22-23 24-25 26-27
EXTERNAL DIMENSION: (mutual interest projects)	28-29
NATURAL GAS	
LIST OF PROJECTS OF COMMON INTEREST AND GENERAL MAP	30-33
GAS PIPELINES: EUROPE (WEST) GAS PIPELINES: EUROPE (EAST) LNG TERMINALS & STORAGE FACILITIES	34-35 36-37 38-39
EXTERNAL DIMENSION:	40-41

(mutual interest projects)

# **ELECTRICITY NETWORKS: LIST OF PROJECTS OF COMMON INTEREST**

#### a. Connection of isolated electricity networks to European interconnected networks

a1	UNITED KINGDOM	Connection by submarine cable of Northern Ireland to Scotland
uı	UNITED MINUDUM	Connection by submarine capie of Northern fielding to Scott

Connection by submarine cable of Greek network to Italian a4 GREECE - ITALY network through North-Western Greece and South-Eastern Italy.

**UNITED KINGDOM** Connection by submarine cable of the Isle of Man.

#### b.

. Development of electricity interconnections between Member States			
b1 GERMANY - DENMARK	Connection by submarine cable between the German network (UCPTE) and Denmark's Eastern network (NORDEL).		
<u>b4</u> <u>FRANCE - BELGIUM</u>	Completion of connection between the two countries' networks through North-Eastern France and Southern Belgium.		
b5 FRANCE - GERMANY	Strengthening of the connections between the two countries.		
b6 FRANCE - ITALY	Connection between the two countries' networks through South-Eastern France and North-Western Italy.		
b7 FRANCE - SPAIN	Land connection between the two countries' networks through South-Western France and Northern Spain.		
<u>b9</u> <u>BELGIUM - LUXEMBOURG</u>	Connection between the two countries' networks.		
b10 SPAIN - PORTUGAL	Strengthening and completion of connections between the two countries through the regions of Northern Portugal and North-Western Spain.		
b10(a) SPAIN - PORTUGAL	New connection between the two countries through the Southern region of Portugal and the South-West of Spain.		
b11 FINLAND - SWEDEN	Strengthening interconnections North of the Gulf of Bothnia.		
b12 AUSTRIA - ITALY	Strengthening connections between the North of Italy and the Austrian network.		
b13 IRELAND - UNITED KINGDOM (N. Ireland)	Strengthening of connections between Ireland and Northern Ireland.		

#### TRANS-EUROPEAN ENERGY NETWORKS: POLICY AND ACTIONS OF THE EC

b14 AUSTRIA - GERMANY
 Strengthening of the connections between the two countries.
 b15 THE NETHERLANDS - Connection by submarine cable between South-East England and Central Netherlands.

# c. Development of internal electricity connections necessary to make the best use of interconnections between Member States

<u>c2</u>	<u>DENMARK</u>	Connections by submarine cable between the country's Western (UCPTE) and Eastern (NORDEL) networks.
<u>c3</u>	THE NETHERLANDS	Strengthening connections in the North-East of the country.
<u>c4</u>	<u>FRANCE</u>	Strengthening connections in the North-East of the country.
<u>c5</u>	<u>ITALY</u>	Strengthening and developing connections on the East-West axis in the North of the country and on the North-South axis.
<u>c5(a</u>	<u>n) ITALY</u>	Strengthening and development of connections on the East-West axis in the North-West of the country and on the North-South axis in the Centre of the country.
<u>c6</u>	<u>SPAIN</u>	Strengthening and developing connections in the regions in the North of the country and in the regions along the Mediterranean axis.
<u>c7</u>	<u>PORTUGAL</u>	Strengthening connections necessary for interconnections with Spain in the North and Centre of the country.
<u>c8</u>	<u>GREECE</u>	Strengthening connections on the East-West axis in the North of the country.
<u>c9</u>	<u>IRELAND</u>	Strengthening of connections in the North-West of the country.
<u>c10</u>	<u>SPAIN</u>	Strengthening and development of connections in the North-East and West of the country, in particular to connect to the network production capacities of electricity generated from wind-power.
<u>c11</u>	<u>SWEDEN</u>	Strengthening and development of internal connections.
<u>c12</u>	<u>GERMANY</u>	Development of connections in the North of the country.

#### **ELECTRICITY NETWORKS: LIST OF PROJECTS OF COMMON INTEREST**

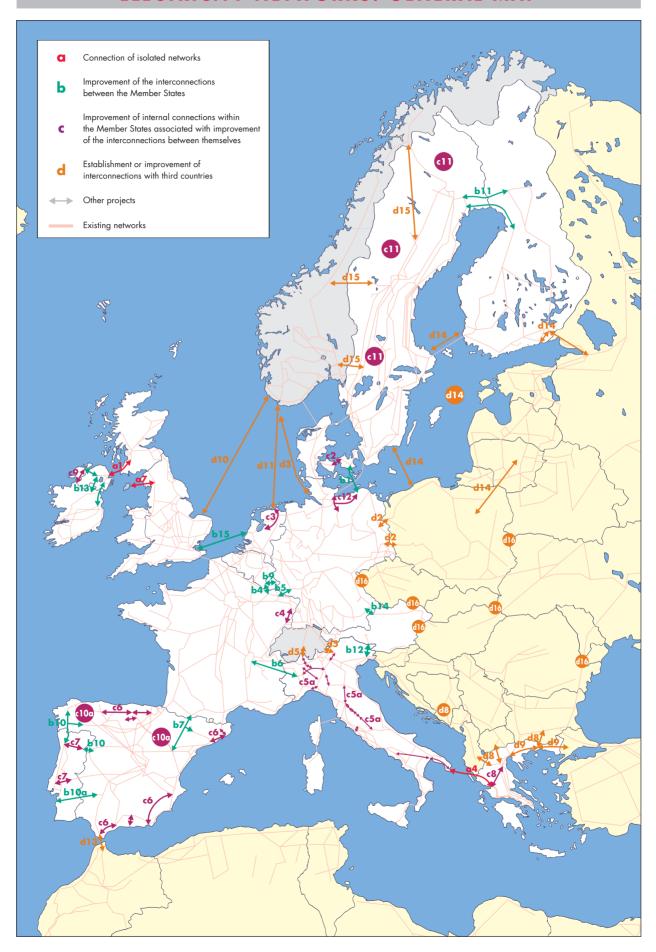
(continued)

d. Development of electricity interconnections with third countres in Europe and the Mediterranean Region helping to improve the reliability, security and supply of Community electricity networks

<u>d2</u>	GERMANY - POLAND	Strengthening of the connections between the two countries.
<u>d3</u>	GERMANY - NORWAY	Connection by submarine cable between Northern Germany (UCPTE) and Southern Norway (NORDEL).
<u>d5</u>	ITALY - SWITZERLAND	Strengthening connections between Northern Italy and Switzerland.
<u>d8</u>	GREECE - BALKAN COUNTRIES	Strengthening of connections between Greece and, respectively, Albania, Bulgaria and former Yugoslavia, including the restoration of the connections with the North of former Yugoslavia and the UCPTE network.
<u>d9</u>	GREECE - TURKEY	Connections between the two countries through North-Eastern Greece.
<u>d10</u>	UNITED KINGDOM - NORWAY	Connection by submarine cable between North-East/East England and Southern Norway (NORDEL).
<u>d11</u>	THE NETHERLANDS - NORWAY	Connection by submarine cable between the North-Eastern Netherlands (UCPTE) and Southern Norway (NORDEL).
<u>d13</u>	<u>SPAIN - MOROCCO</u>	Connection by submarine cable between Southern Spain and the Moroccan network.
<u>d14</u>	BALTIC RING: GERMANY - POLAND - RUSSIA - ESTONIA - LATVIA - LITHUANIA - SWEDEN - FINLAND - DENMARK - BELARUS	Strengthening and developing connections between these countries' networks by overground and/or submarine cables.
<u>d15</u>	SWEDEN - NORWAY	Strengthening of the connections between the two countries.
<u>d16</u>	<u>EU - BELARUS - RUSSIA -</u> <u>UKRAINE</u>	Development of connections and interface between the (extended) UCPTE network and the networks of third countries in Eastern Europe, including the relocation of the HVDC conversion stations operating previously between Austria and Hungary, Austria and the Czech Republic and Germany and

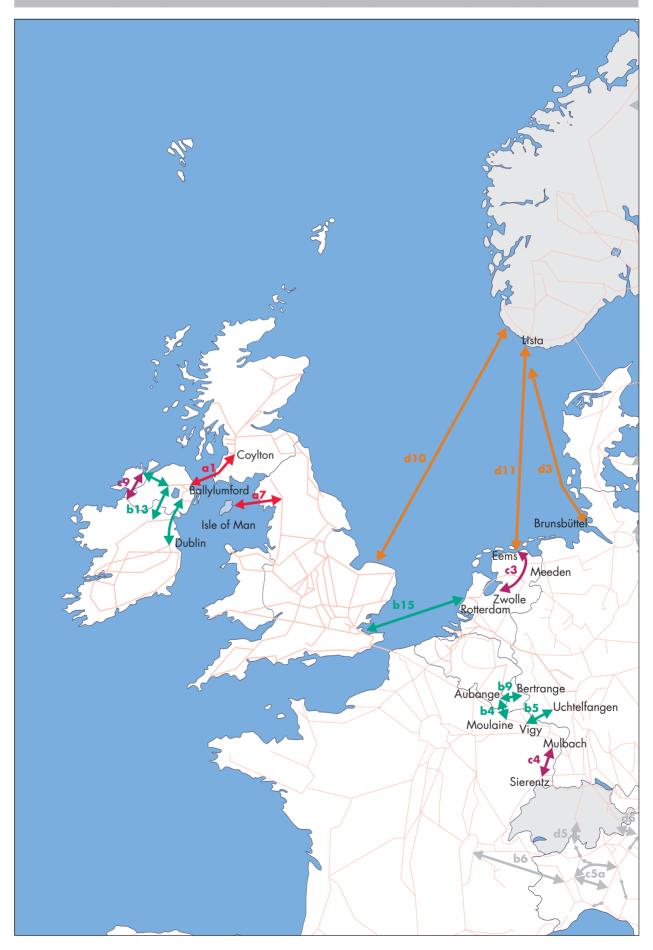
the Czech Republic.

# **ELECTRICITY NETWORKS: GENERAL MAP**



	SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
<u>a1</u>	<u>UNITED KINGDOM</u> Island Magee - Coylton link.	Authorisation procedures. Commissioning: 2000. CSF: 81 MECU.
<u>a7</u>	UNITED KINGDOM  North-West England - Isle of Man link.	Feasibility studies and seabed survey. Commissioning: 1999. TEN line: 1997 decision for co-financing of studies.
<u>b4</u>	FRANCE - BELGIUM	
	Moulaine - Aubange line.	Authorisation procedures. Commissioning: 1999.
<u>b5</u>	FRANCE - GERMANY	
	Vigy (FR) - Marlenheim (FR) - Uchtelfangen (DE) line.	Authorisation procedures. Commissioning: 1999
<u>b9</u>	BELGIUM-LUXEMBOURG	
	Aubange - Bertrange line.	Authorisation procedures. Commissioning: 2000.
<u>b13</u>	<u> IRELAND - UNITED KINGDOM</u> ( <u>N. IRELAND)</u>	
	Specification not yet defined.	Feasibility studies. Commissioning: after 2000 TEN line: 1997 decision for co-financing of studies.
<u>b15</u>	THE NETHERLANDS - UNITED KINGDOM  Rotterdam area - South-eastern England link.	Feasibility studies. Seabed survey in 1998. Commissioning: after 2000. TEN line: 1997 decision for co-financing of studies.
<i>c3</i>	THE NETHERLANDS	
	Zwolle - Meeden - Eemshaven line.	In operation since 1996.
<u>c4</u>	<u>FRANCE</u>	
	Sierrentz - Mulbach line.	Authorisation procedures. Commissioning: 1999.
<u>c9</u>	<u>IRELAND</u>	
	Connections in the county of Donegal.	Feasibility studies. Commissioning: after 2000.
<u>d3</u>	GERMANY - NORWAY	
	Brunsbüttel - Southern Norway link.	Authorisation procedures and feasibility studies. Commissioning: 2003.
<u>d10</u>	<u> UNITED KINGDOM - NORWAY</u>	
	Specification not yet defined.	Feasibility studies. Seabed survey in 1998. Commissioning: 2004. TEN line: 1997 decision for co-financing of studies.
<u>d11</u>	THE NETHERLANDS - NORWAY	
	Eemshaven - Lista link.	The "NorNed cable" project. Feasibility studies and seabed survey. Commissioning: 2001.
		TEN line: 1996 decision for co-financing of studies.

# **ELECTRICITY NETWORKS: NORTH-WEST EUROPE**



SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
b1 GERMANY - DENMARK Bjæverskov - Bentwisch link.  b11 FINLAND - SWEDEN Petäjäskoski (FIN) - Letsi (S) line. Pikkarala (FIN) - Keminmaa (FIN) - Svartbyn (S) line.	In operation since 1996.  Increasing of the transmission capacity of these lines through the installation of compensation devices.  Studies under finalisation. Commissioning: 1997.  TEN line: 1995 decision for co-financing of studies.
c2 DENMARK Fyn - Sjælland.	Project declared as "priority project" at the Essen Summit (December 1994).  Project decided. Financing of the project not finalized.  Commissioning: (1997) postponed.
c11 SWEDEN  Connections in Northern Sweden.  Connections in Central Sweden.  Connections in Southern Sweden.	Feasibility studies. Feasibility studies.
c12 GERMANY Lübeck/Siems - Görries - Güstrow line. Lübeck/Siems - Krümmel line.	Authorisation procedures. Some sections under construction. Görries-Gustrow: commissioned in 1996. Commissioning of the complete lines: 1998.
d2 GERMANY - POLAND  Hagenwerder - Mikulowa line.  Neuenhagen (DE) - Vierraden (DE)  - Krajnik (PL) line.	Feasibility studies. Commissioning: 1998. Feasibility studies. Commissioning: 2000.
d14 BALTIC RING: GERMANY - POLAND - RUSSIA - ESTONIA - LATVIA - LITHUANIA - SWEDEN - FINLAND - DENMARK - BELARUS Southern Finland - Vyborg (Russia) - Saint Petersburg (Russia) link.	An overall feasibility study for the Baltic Ring projects is ongoing.  TEN line: 1995 decision for co-financing of studies.  In operation. Feasibility studies for increasing the capacity.  TEN line: 1996 decision for co-financing of studies
Sweden - Finland link (through submarine cable).	EIF loan guarantee: requested.  In operation. Feasibility studies for increasing the utilisation of the existing link.  TEN line: 1996 decision for co-financing of studies.
Sweden - Poland link (through submarine cable).	Feasibility studies. TEN line: 1995 decision for co-financing of studies.
Germany - Poland - Lithuania - Belarus - Russia (East-West High Power Link).	Feasibility studies. TEN line: 1996 decision for co-financing of studies.
Poland - Lithuania link.  Other connections: specification not yet defined.	Feasibility studies. TEN line: 1995 decision for co-financing of studies.
d15 SWEDEN - NORWAY	
Grundfors - Narvik line. Mid Sweden - Mid Norway South-West Sweden - Oslo region line.	Authorisation procedures. Pre-feasibility studies. Feasibility studies. TEN line: 1997 decision for co-financing of studies.

# **ELECTRICITY NETWORKS: NORTH-EAST EUROPE**



	SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
<u>b6</u>	FRANCE - ITALY Grand île - Piossasco line.	Project declared as "priority project" at the Essen Summit (December 1994). Authorisation procedures. Commissioning: 2000. TEN line: 1995 decision for co-financing of studies.
<u>b7</u>	FRANCE - SPAIN  Cazaril - Aragón line or alternative route/layout, including connection to the Sallente - Sentmenat line.	Project declared as "priority project" at the Essen Summit (December 1994). 75% of the Spanish line built. Project suspended. Feasibility studies on new routes ongoing. Commissioning: (1998) postponed. TEN line: 1995 and 1996 decisions for co-financing of studies.
<u>b10</u>	<u>O SPAIN - PORTUGAL</u> Mesón - Lindoso line.	Project declared as "priority project" at the Essen Summit (December 1994). In operation since 1996. CSF (Spain): 3 MECU EIB loan: 26 MECU
	Aldeadavila - Douro International line.	Pre-feasibility studies. Commissioning: 2004.
<u>b10</u>	O(a) SPAIN - PORTUGAL Balboa - Sines line.	Pre-feasibility studies. Commissioning: after 2000.
<u>c6</u>	<u>SPAIN</u>	
	Connections in the North: - Soto-Penagos-Gueñes-Itxaso line Aguayo - "Penagos-Barcina" line.	Authorisation procedures. Some sections are under construction. Commissioning: 2000.  TEN line: 1995 decision for co-financing of studies. In operation since January 1997.
	Connections on the Mediterranean axis:	
	- Almeria - Rocamora line.	Under construction. Commissioning: 1997.
	- Pinar - Tajo line.	Under construction. Commissioning: 1997. EIB loan: 25 MECU.
	- Caparacena - "Tajo-Almería" line.	In operation since January 1997.
	- Sentmenat - Bescanó line.	Feasibility studies. Commissioning: 2004. TEN line: 1996 decision for co-financing of studies.
	- Bescanó - "Vic - Baixas" line.	Feasibility studies. Commissioning: 2004. TEN line: 1996 decision for co-financing of studies.
<u>c7</u>	PORTUGAL Pego - Rio Maior II line.	Authorisation procedures. Commissioning: 1998.
	Recarei-Douro International line.	Feasibility studies. Commissioning: 2001. TEN line: 1995 decision for co-financing of studies.
<u>c10</u>	<u>SPAIN</u>	
	Connections in the North-East: - in Alava, Aragon and Navarra.	Feasibility studies. Commissioning: after 2000. TEN line: 1997 decision for co-financing of studies.
	Connections in the West: - in Galicia.	Feasibility studies. Commissioning: after 2000. TEN line: 1997 decision for co-financing of studies.
<u>d13</u>	SPAIN - MOROCCO	
	Pinar - Tetouan link.	Under construction. Commissioning: 1997. TEN line: 1995 decision for co-financing of studies. INTERREG: 12.5 MECU.

## **ELECTRICITY NETWORKS: SOUTH-WEST EUROPE**



SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
a4 GREECE - ITALY Ipiros - Puglia link.	Project declared as "priority project" at the Essen Summit (December 1994). Authorisation procedures. Commissioning: 2000 REGEN (35 MECU); INTERREG II (78,5 MECU); EIB loan (100 MECU).
<u>b12</u> <u>AUSTRIA - ITALY</u> Lienz - Cordignano line.	Authorisation procedures. Commissioning: 2004. TEN line: 1995 decision for co-financing of studies.
b14 AUSTRIA - GERMANY St Peter - Isar line.	Pre-feasibility studies. Commissioning: after 2000.
c5 ITALY Connections on the East-West axis: - Vado Ligure - Morigallo line.  - Caorso - San Damaso line Rondissone-Castelnuovo/Scrivia line Turbigo - Rho line Turbigo - Baggio line Gorlago - San Fiorano line San Fiorano substation Turbigo - Piedilago line Piedilago pumping station.  Connections on the North-South axis: - Tavarnuzze - Poggio a Caiano - Calenzano line Pietrafitta - Santa Barbara line.  - Santa Barbara - Tavarnuzze line Tavarnuzze substation Matera - Santa Sofia line.	Authorisation procedures. Commissioning: 2004. TEN line: 1995 decision for co-financing of studies. In operation. In operation. Under construction. Commissioning: 1999. Authorisation procedures. Commissioning: 2000. Under construction. Commissioning: 1997. Under construction. Commissioning: 1997. Authorisation procedures. Commissioning: 2004. Authorisation procedures. Commissioning: 2004. TEN line: 1995 decision for co-financing of studies.  Under construction. Commissioning: 1997. Authorisation procedures. Commissioning: after 2000. TEN line: 1995 decision for co-financing of studies. Authorisation procedures. Commissioning: 2000. TEN line: 1995 decision for co-financing of studies. Authorisation procedure. Commissioning: 1998. Authorisation procedures. Commissioning: 1998.
<ul> <li>Galatina - Taranto Nord line.</li> <li>Pian della Speranza/Roma Nord - Montalto/Suvereto line.</li> <li>c5(a) ITALY Connections on the East-West axis: <ul> <li>Chivasso - Magenta line.</li> </ul> </li> <li>Colunga - Calenzano line.</li> </ul>	Authorisation procedures. Commissioning: 1998. Authorisation procedures. Commissioning: 1998.  Feasibility studies. Commissioning: between 2000 and 2002. TEN line: 1997 decision for co-financing of studies. Feasibility studies. Commissioning: between 2000 and 2002. TEN line: 1997 decision for co-financing of studies.
Connections on the North-South axis: - Pietrafitta - Villavalle line.  c8 GREECE	Feasibility studies. Commissioning: between 2000 and 2002. TEN line: 1997 decision for co-financing of studies.
Arachthos - Ptolemaïs line.	Pre-feasibility studies. Commissioning: after 2000.
d5 ITALY - SWITZERLAND S. Fiorano-Robbia line. Piedilago - Airolo line. d8 GREECE - BALKAN COUNTRIES	Under construction. Commissioning: 1998. Authorisation procedures. Commissioning: 2004.
Philippi (GR) - Plovdiv or Maritsa 3 (Bulgaria) line. Amintaio (GR) - Bitola (FYROM) line. Thessaloniki (GR) - Mostar (Bosnia) - Melina (Croatia) line.  d9 GREECE - TURKEY	Feasibility studies. TEN line: 1997 decision for co-financing of studies Feasibility studies. TEN line: 1997 decision for co-financing of studies Pre-feasibility studies.
Section in Greece: - Thessaloniki - Philippi line Philippi - GR/TU border line. Section in Turkey.	Under construction. Commissioning: 1998. Pre-feasibility studies. Pre-feasibility studies.
d16 EU - BELARUS - RUSSIA - UKRAINE Connections between the UCPTE and CENTREL systems.  Connections between the UCPTE/CENTREL systems and the Balkan countries.  Connections and interface between the extended UCPTE system and Belarus, Russia and Ukraine, including the relocation of existing HVDC conversion stations.	In operation since December 1995. Feasibility studies for improving the stability of the interconnected operation of the two systems. TEN line: 1997 decision for co-financing of studies. Feasibility studies. PHARE: financing of studies for the connection of Albania, Bulgaria and Romania. Feasibility studies. PHARE/TACIS: financing of interface study. TEN line: 1997 decision for co-financing of studies concerning the relocation of conversion stations of Wien Südost and Dürnrohr.

# **ELECTRICITY NETWORKS: SOUTH-EAST EUROPE**



#### **ELECTRICITY NETWORKS: EXTERNAL DIMENSION**

#### PROJECTS OF MUTUAL INTEREST

	Med	iterra	nean	area
--	-----	--------	------	------

d9 GREECE - TURKEY Connections between the two countries through North-Eastern

Greece.

<u>d13 SPAIN - MOROCCO</u> Connection by submarine cable between southern

Spain and the Moroccan network.

**Mainland Europe** 

<u>d2</u> <u>GERMANY - POLAND</u> Strengthening of the connections between the two countries.

d5 ITALY - SWITZERLAND Strengthening connections between Northern Italy and

Switzerland.

d8 GREECE - BALKAN COUNTRIES Strengthening of connections between Greece and, respectively,

Albania, Bulgaria and former Yugoslavia, including the restoration of the connections with the North of the former Yugoslavia and the

UCPTE network.

d16 EU - BELARUS - RUSSIA - UKRAINE Development of connections and interface between the (extended)

UCPTE network and the networks of third countries in Eastern Europe, including the relocation of the HVDC conversion stations operating previously between Austria and Hungary, Austria and the Czech Republic and Germany and the Czech Republic.

**Northern Europe** 

d3 GERMANY - NORWAY Connection by submarine cable between Northern Germany

(UCPTE) and Southern Norway (NORDEL).

<u>d10</u> <u>UNITED KINGDOM - NORWAY</u> Connection by submarine cable between North-East/East England

and Southern Norway (NORDEL).

<u>d11</u> <u>THE NETHERLANDS - NORWAY</u> Connection by submarine cable between the North-Eastern

Netherlands (UCPTE) and Southern Norway (NORDEL).

d14 BALTIC RING: GERMANY
Strengthening and developing connections between

**POLAND - RUSSIA - ESTONIA -** the networks of these countries by overhead lines **LATVIA - LITHUANIA - SWEDEN -** and/or submarine cables.

FINLAND - DENMARK - BELARUS

d15 <u>SWEDEN - NORWAY</u> Strengthening of the connections between the two countries.

# **ELECTRICITY NETWORKS: EXTERNAL DIMENSION**



#### NATURAL GAS NETWORKS: LIST OF PROJECTS OF COMMON INTEREST

#### e. Introduction of natural gas into new regions

**GREECE** 

<u>e4</u>	<u>SPAIN</u>	Setting up gas networks in the regions of Galicia, Extremadura, Andalusia, Valencia-South, Murcia, including an LNG terminal in Galicia
<u>e5</u>	<u>PORTUGAL</u>	Setting up in the country, in particular along the Atlantic coastline, of a gas network.
<u>e5(a</u>	) <u>PORTUGAL</u>	Construction of an LNG terminal on the Atlantic coast.

Setting up a gas network in the country, in particular along the Aegean coastline, including an LNG terminal in Attica and storage

f. Connection of isolated gas networks to the interconnected European networks, including the necessary improvement of the existing networks, and connection of separate natural gas networks

facilities.

<u>f1</u>	IRELAND - UNITED KINGDOM (N. IRELAND)	Connection between the gas networks of Ireland and the United Kingdom (Northern Ireland).
<u>f2</u>	<u>UNITED KINGDOM -</u> <u>CONTINENT</u>	Submarine connection between the gas networks of the United Kingdom and the continent through Belgium.
<u>f3</u>	LUXEMBOURG - GERMANY	Establishing a connection to supply Luxembourg from the German networks.
<u>f5</u>	FRANCE - SPAIN	Strengthening of transport capacity between the two countries.
<u>f6</u>	PORTUGAL - SPAIN	Constructing gas pipelines to supply Portugal through Southern Spain and to supply Galicia and Asturias through Portugal.
<u>f7</u>	<u>FRANCE</u>	Connection of the networks of the South-West and of the South of the country.
<u>f8</u>	AUSTRIA - GERMANY	Strengthening of transport capacity between Austria and Bavaria.

#### TRANS-EUROPEAN ENERGY NETWORKS: POLICY AND ACTIONS OF THE EC

<u>f9</u>	AUSTRIA - HUNGARY	Connection between the networks of the two countries.
<u>f1</u>	10 AUSTRIA - SLOVAKIA	Connection of Austria to underground storage in Slovakia.
<u>f1</u>	11 AUSTRIA	Connection between gas pipelines linking Austria to, respectively, Germany and Italy.
<u>f1</u>	22 GREECE - ALBANIA	Connection between the networks of the two countries.
_	ncreasing reception (LNG) and sto iversification of supply sources an	orage capacity necessary to satisfy demand, and nd routes for natural gas
g	<u>I</u> <u>IRELAND</u>	Developing natural gas storage facilities to supply the Irish network.
<u>g:</u>	3 FRANCE	Extending capacity of existing LNG terminal in Western France.
<u>g</u> 2	4 ITALY	Construction of new LNG terminal to allow diversification of supplies, in particular for electricity generation.
<u>g′</u>	7 FRANCE	Extension of underground storage capacities in the South-West of the country.
<u>g(</u>	8 SPAIN	Development of underground storage capacity on the country's North-South axis.
<u>g(</u>	8(a) SPAIN	Development of underground storage capacities on the Mediterranean axis.

Belgium.

Germany.

Constructing an underground storage facility.

Extending existing underground storage capacity in Northern

existing sites or creating a new site close to the frontier with

Extension and development of underground storage capacities.

Extending underground storage capacity by increasing capacity on

g9 PORTUGAL

g11 BELGIUM

g12 DENMARK

g13 AUSTRIA

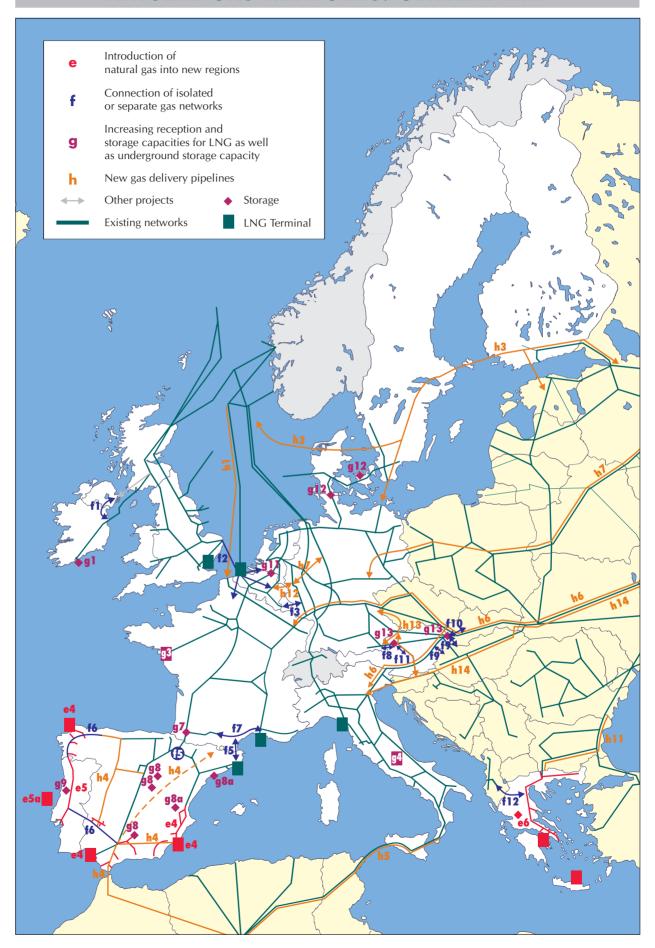
## NATURAL GAS NETWORKS: LIST OF PROJECTS OF COMMON INTEREST

(continued)

h. Increasing transmission capacity (gas delivery pipelines) necessary to meet demand and diversification of supply sources and routes for natural gas

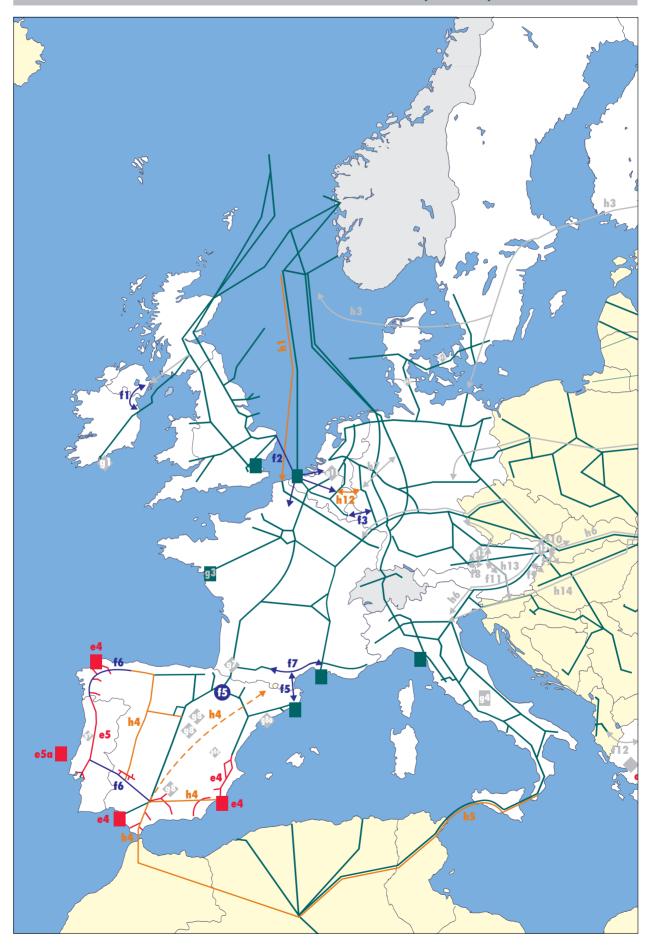
<u>h1</u>	NORWAY - FRANCE	Construction of a 4th gas pipeline from Norwegian resources (North Sea) to the Continent.
<u>h3</u>	NORWAY - DENMARK - SWEDEN - FINLAND - RUSSIA - BALTIC STATES	Creation and development of connections between the networks of these countries with a view to setting up an integrated gas network.
<u>h4</u>	ALGERIA - SPAIN - PORTUGAL - FRANCE	Construction of new gas pipelines to allow Spain and Portugal initially, and subsequently France, to be supplied from Algeria via Morocco.
<u>h5</u>	ALGERIA - TUNISIA - ITALY	Increasing the transport capacity of the trans-Mediterranean gas pipeline to Italy from Algerian resources.
<u>h6</u>	RUSSIA - UKRAINE - EU	Increasing transport capacity to the European Union from Russian resources via the main existing axis through the Ukraine, Slovakia and the Czech Republic.
<u>h7</u>	RUSSIA - BELARUS - POLAND - EU	Creation of a second transport axis from Russian resources to the European Union via Belarus and Poland.
<u>h11</u>	BULGARIA - GREECE	Improvements to the gas transportation network in Bulgaria to ensure supplies from Russian resources to the new gas network in Greece.
<u>h12</u>	BELGIUM - GERMANY	Connecting gas pipeline between the Belgian and the German networks.
<u>h13</u>	GERMANY - CZECH REPUBLIC - AUSTRIA - ITALY	Construction of a system of connecting pipelines between the German, Czech, Austrian and Italian gas networks.
<u>h14</u>	RUSSIA - UKRAINE - SLOVAKIA - HUNGARY - SLOVENIA - ITALY	Construction of a new gas pipeline, from Russian resources, to Italy.

## NATURAL GAS NETWORKS: GENERAL MAP



	SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
	SPAIN Network in Galicia. Network in Extremadura. Network in Andalusia. Valencia - Murcia - Cartagena pipeline. LNG at Huelva (extending existing terminal). LNG at Cartagena (extending existing terminal). LNG in Galicia (new terminal). PORTUGAL Setubal - Braga pipeline.	Project decided (see also project f6). Commissioning: 1998. Under construction (see also projects f6 and h4). Commissioning: 1998. Under construction. Commissioning: 1997. Under construction. Commissioning: 1997. CSF: 107 MECU (requested). In operation since 1996. CSF: 7 MECU. Pre-feasibility studies. Commissioning: 1999. Project postponed. Project declared as "priority project" at the Essen Summit (December 1994). In operation since February 1997. REGEN (82 MECU); INTERREG II (70 MECU); CSF (21 MECU); EIB loan (354 MECU) and ECSC loan (102 MECU). Both loans for this project and its interconnections with Spain (project f6).
<u>f1</u>	IRELAND - UNITED KINGDOM	
	(N. IRELAND)  Dublin - Belfast pipeline.	Feasibility study completed. Possible commissioning: 2000. TEN line: 1995 decision for co-financing of studies.
<u>f2</u>	UNITED KINGDOM - CONTINENT  Bacton-Zeebrugge pipeline. Reinforcement in Belgium of the transportation network to: - France, - Germany,	Under construction. Commissioning: 1998.  Under construction. Commissioning: 1998.
<u>f3</u>	- the Netherlands.  LUXEMBOURG - GERMANY  Specification and set of fine decimals.	Des Constitution and disc
	Specification not yet defined.  FRANCE - SPAIN  Compression station at Calahorra (ES), on existing pipeline. Perpignan - Barcelona pipeline.  PORTUGAL - SPAIN  Leiria - Cordoba pipeline.  Braga (PO) - Tuy (ES) - Villalba (ES) - Ribadeo (ES) pipeline.	Pre-feasibility studies.  Authorisation procedures. Beginning of construction mid 1997. Commissioning: 1999. Pre-feasibility studies. Project declared as "priority project" at the Essen Summit (December 1994). In operation since January 1997. Under construction. Commissioning: end 1997. For both pipelines: INTERREG II: 150 MECU Portuguese CSF: 6 MECU
<u>f7</u>	FRANCE Lias - Toulouse pipeline. Toulouse - Cruzy - Fos-sur-Mer pipeline.	EIB and ECSC loans: see project e5.  The "Artère du Midi" project. In operation. Under construction. Commissioning: 1997.
	NORWAY - FRANCE Sleipner - Dunkerque pipeline.  ALGERIA - SPAIN - PORTUGAL - FRANCE Algeria - Morocco - Spain (up to Córdoba) pipeline.	The "NORFRAPIPE" project. Under construction. Commissioning: 1998.  Project declared as "priority project" at the Essen Summit (December 1994). In operation since November 1996.  EIB loans: 641 MECU for works from Algeria to Tarifa (ES).
	Extension towards the North-East: - Córdoba - Cartagena pipeline Córdoba - France pipeline. Extension towards the North-West: - Western pipeline: Extremadura- Castilla y León-Asturias- Galicia.	CSF for Spain: 99 MECU Feasibility studies. Possible commissioning: 2000. Pre-feasibility studies. Commissioning: after 2000.  Authorisation procedures and under construction (some stretches). Commissioning: 1999. CSF: 105 MECU (requested).
	ALGERIA - TUNISIA - ITALY Doubling of the trans-Mediterranean pipeline (via Sicily).  BELGIUM - GERMANY	In operation since January 1997.
1112	Section in Belgium: - Berneau - Eynatten (BE/DE border) pipeline.	(see also project f2). Authorisation procedures. Commissioning: 1998.

# **GAS PIPELINES: EUROPE (WEST)**



	SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
<u>e6</u>	GREECE Main network:	Project declared as "priority project" at the Essen Summit (December 1994).
	- GR/BG border - Athens pipeline LNG at Revithoussa (new terminal).	In operation since November 1996. Under construction. Commissioning: 1998.
	High pressure branches: - High pressure branches in the Thessaloniki,	Under construction. Commissioning: 1997 and 1998.
	Volos and Atikki areas High pressure branch to Thrace.	Under construction. Commissioning: 1999.
	- Then pressure trailer to Thrace.	TEN line: 1995 decision for co-financing of studies. For the main network and the above high pressure branches:
		REGEN (87 MECU); INTERREG II (180 MECU); CSF (262 MECU); EIB loan (307 MECU) and ECSC loan (83 MECU + 97 MECU requested).
	- High pressure branch to Corinth	Feasibility studies. TEN line: 1995 decision for co-financing of studies.
	- High pressure branch to North-Western Greece. Storage facilities (underground).	Feasibility studies. TEN line: 1997 decision for co-financing of studies.  Feasibility studies. TEN line: 1995 decision for co-financing of studies.
	LNG terminal and network on the island of Creta.	Feasibility studies. TEN line: 1996 decision for co-financing of studies.
<u>f8</u>	AUSTRIA - GERMANY Purchkirchen (AT) - Burghausen (DE) - Schnaitsee (DE) pipeline.	Authorisation procedures. Commissioning: 1998.
<u>f9</u>	AUSTRIA - HUNGARY Baumgarten - Györ pipeline.	In operation since October 1996.
	Wiener Neustadt - Sopron pipeline.	Feasibility studies.
<u>f10</u>	AUSTRIA - SLOVAKIA Baumgarten - March (Lab storage) pipeline.	Under construction. Commissioning: 1997.
<u>f11</u>	<u>AUSTRIA</u> Krift - Pyhrn pipeline.	Authorisation procedures. Beginning of construction in 1997. Commissioning: 1998.
<u>f12</u>	<u>GREECE-ALBANIA</u> North-Western Greece - Elbasan pipeline.	Feasibility studies. TEN line: 1997 decision for co-financing of studies.
<u>h3</u>	NORWAY - DENMARK - SWEDEN -	The "NORDIC GAS GRID" project.
	FINLAND - RUSSIA - BALTIC STATES Specification not yet defined.	Feasibility studies. Commissioning: between 2002 and 2005. TEN line: 1997 decision for co-financing of studies.
<u>h6</u>	<u>RUSSIA - UKRAINE - EU</u> Section in Russia, Ukraine and Slovakia.	In operation. Upgrading of the existing pipelines. Under construction in Slovakia.
	Section in Czech Republic, Germany and France. Section in Austria and Italy.	Under construction in the Czech Republik. Feasibility study in Austria.
<u>h7</u>	RUSSIA - BELARUS - POLAND - EU	Project declared as "priority project" at the Essen Summit (December 1994).
	Section in Russia and Belarus.	The "YAMAL- EUROPE" project Pipeline in Belarus: under construction.
	Section in Poland.	Pipeline in Western Poland: in operation since end 1996. Pipeline in Central and Western Poland: project decided.
	Section in Germany: - YAGAL pipeline (between Frankfurt/Oder	The Oder crossing is in operation since end 1996.
	and the STEGAL pipeline).	Authorisation procedures and under construction.
	- WEDAL pipeline (between the MIDAL pipeline and Eynatten at the BE/DE border).	Authorisation procedures and under construction.  Commissioning: - MIDAL - Soest (82 km): in 1997
<u>h11</u>	BULGARIA - GREECE Doubling the transportation network in Bulgaria:	Under construction. PHARE (Interreg): 4 MECU.
	Kardan-Valchi Dol-Lozenets-St. Zagora-Ihtiman	
<u>h1</u> 3	New pipeline: Ihtiman (BG) - BG/GR border.  GERMANY - CZECH REPUBLIC -	In operation since mid-1996.  The "PENTA" project.
	AUSTRIA - ITALY Burghausen (DE) -Mauerkirchen (AT) pipeline.	Under construction (20 km).
	Other connecting pipelines: specification not yet defined	Feasibility studies. Commissioning: from 1996 to 2001. TEN line: 1997 decision for co-financing of studies.
<u>h14</u>	RUSSIA - UKRAINE - SLOVAKIA -	The "VOLTA" project.
	HUNGARY - SLOVENIA - ITALY Section in Russia, Ukraine and Slovakia.	Feasibility studies for the section in Italy. Commissioning: - First phase in 1999 and second phase in 2003-2005.
	Section in Hungary and Slovenia. Section in Italy.	TEN line: 1997 decision for co-financing of studies.

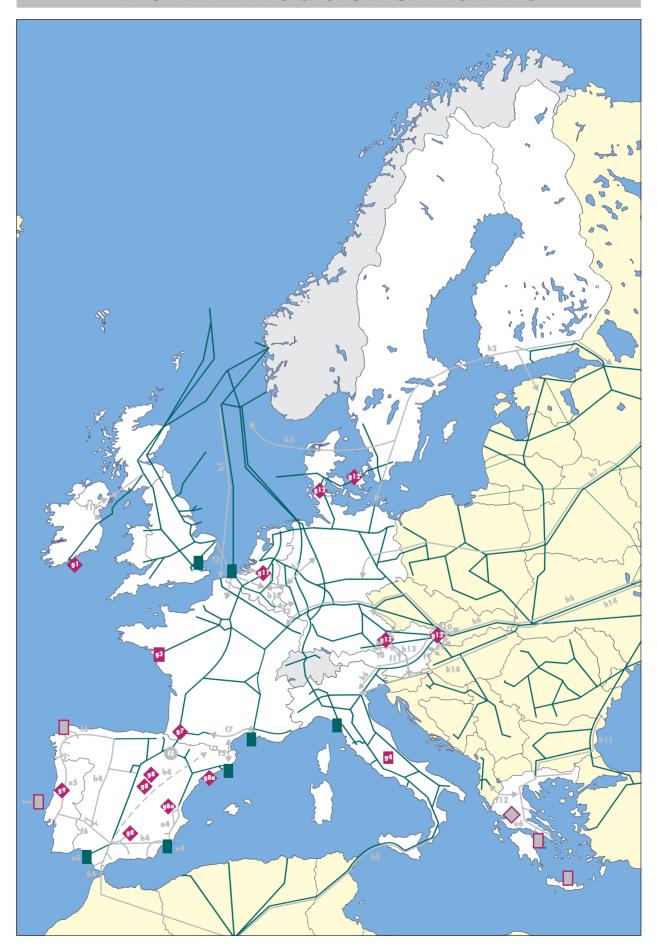
# **GAS PIPELINES: EUROPE (EAST)**



#### TRANS-EUROPEAN ENERGY NETWORKS: POLICY AND ACTIONS OF THE EC

SPECIFICATION OF THE PROJECT	STAGE REACHED AND EC FINANCIAL INTERVENTION
e5(a) PORTUGAL Specification not yet defined.	Feasibility studies. Commissioning between 2002 and 2004.
g1 <u>IRELAND</u> Storage at Kinsale Head (under-ground).	Feasibility studies. Commissioning: 1998-2000. TEN line: 1996 decision for co-financing of studies.
g3 FRANCE LNG at Montoir (extending existing terminal).	Pre-feasibility studies.
g4 ITALY Specification not yet defined.	Authorisation procedures. Commissioning: 2001.
g7 FRANCE Storage at Lussagnet (extending existing site).	Authorisation procedures.
<ul> <li>g8 SPAIN Storage on the North-South axis (new sites) in: <ul> <li>Cantabria.</li> <li>Aragon.</li> <li>Castilla y León.</li> <li>Castilla - La Mancha.</li> <li>Andalucia.</li> </ul> </li> </ul>	Feasibility studies. Commissioning: between 1998 and 2005. TEN line: 1995 and 1996 decisions for co-financing of studies.
g8(a) SPAIN Storage on the Mediterranean axis (new sites) in: - Catalonia C.A. Valenciana Murcia.	Pre-feasibility and feasibility studies. Commissioning: between 1998 and 2005. TEN line: 1997 decision for co-financing of studies.
g9 PORTUGAL Storage in the area of Monte Redondo (new site).	Pre-feasibility studies. Commissioning: 2000. CSF: 52 MECU (foreseen).
g11 BELGIUM Storage at Loenhout (extending existing site).	Project decided. Commissioning: in stages, between 1997 and 2000.
g12 DENMARK Storage at Stenlille (extending existing site).	Feasibility study.  TEN line: 1996 decision for co-financing of studies.
Storage at Toender (new site).	Feasibility study. TEN line: 1995 decision for co-financing of studies.
g13 AUSTRIA Storage at Purchkirchen (extending existing site), including connecting pipeline to the MEGAL system near Wildenranna.	Feasibility studies and authorisation procedures. Commissioning in 1999.
Storage at Baumgarten (new site).	The "Eurostorage" project. Feasibility studies. TEN line: 1997 decision for co-financing of studies.

# LNG TERMINALS & STORAGE FACILITIES



#### **GAS NETWORKS: EXTERNAL DIMENSION**

#### PROJECTS OF MUTUAL INTEREST

<u>h4</u> ALGERIA - SPAIN - PORTUGAL -Construction of new gas pipelines to allow Spain and Portugal initially, and subsequently France and other countries, **FRANCE** 

to be supplied from Algeria via Morocco.

Increasing the transport capacity of the trans-Mediterranean gas **h5** ALGERIA - TUNISIA - ITALY

pipeline to Italy from Algerian resources.

#### **East-European Axis**

<u>f9</u> **AUSTRIA - HUNGARY** Connection between the networks of the two countries.

f10 AUSTRIA - SLOVAKIA Connection of Austria to underground storage in Slovakia.

Connection between the networks of the two countries. f12 GREECE - ALBANIA

RUSSIA - UKRAINE - EU Increasing transport capacity to the European Union from Russian

resources via the main existing axis through the Ukraine, Slovakia

and the Czech Republic.

RUSSIA - BELARUS -Creation of a second transport axis from Russian resources to *h*7

POLAND - EU the European Union via Belarus and Poland.

Improvements to the gas transportation network in Bulgaria to h11 BULGARIA - GREECE

ensure supplies from Russian resources to the new gas network in

h13 GERMANY - CZECH

**REPUBLIC - AUSTRIA - ITALY** 

Construction of a system of connecting pipelines between the German, Czech, Austrian and Italian gas networks.

h14 RUSSIA - UKRAINE - SLOVAKIA -**HUNGARY - SLOVENIA - ITALY** 

Construction of a new gas pipeline, from Russian resources,

to Italy.

#### **North-European axis**

h1 NORWAY - FRANCE Construction of a 4th gas pipeline from Norwegian resources

(North Sea) to the Continent.

FINLAND - RUSSIA -**BALTIC STATES** 

<u>h3</u> <u>NORWAY - DENMARK - SWEDEN -</u> Creation and development of connections between the networks of these countries with a view to setting up an integrated

gas network.

#### LNG reception terminals

*e4* **SPAIN** LNG of Huelva (extending existing terminal).

LNG of Cartagena (extending existing terminal).

LNG in Galicia (new terminal).

e5(a) PORTUGAL LNG on the Atlantic coast (new terminal).

**GREECE** LNG in Attica (new terminal).

LNG in Western France (extending existing terminal). **FRANCE** <u>g3</u>

**ITALY** Construction of a new LNG terminal to allow diversification of g4

supplies, in particular for electricity generation.

# NATURAL GAS NETWORKS: EXTERNAL DIMENSION

