

Gas Regional Investment Plan South-North Corridor (SNC GRIP)



9th ENTSOG Ten Year Network Development Plan Workshop
Vienna, 26th June 2014



GRIP composition

- 4 involved EU Countries (**Belgium**, France, Germany and Italy)
- 1 non-EU Country (Switzerland)
- TSO working team composition (co-authors variation at end 2011):



- Coordination of works facilitated by **Fluxys and Snam Rete Gas**



The Role of the Region

Key functions of the Region:

- **Security of Supply:** current and future, for the expected evolutions of EU supply and demand patterns
- **Market integration:** flexible route connecting the major gas market places in EU



- ✓ 3 TEN-E Corridors and projects interesting the South-North Corridor Region
- ✓ Multiple associated PCIs as recognition of the benefits to IGM
- ✓ Key-role of Reverse-Flow projects to market integration, SoS, competition and sustainability

South-North Corridor
along the core of Europe as backbone for gas hubs interconnections



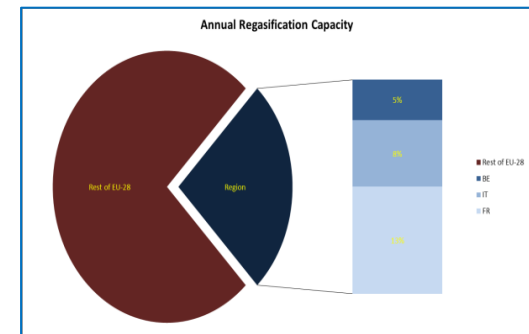
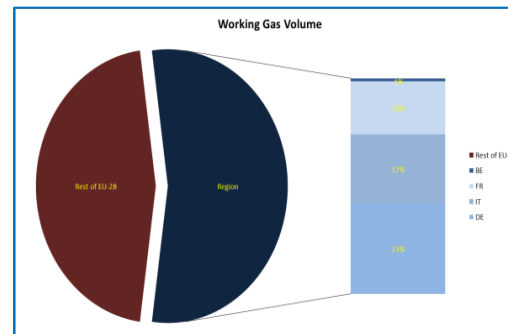
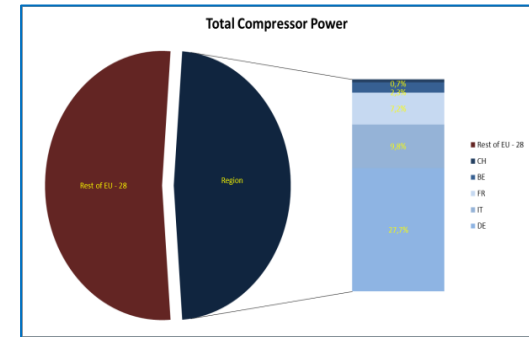
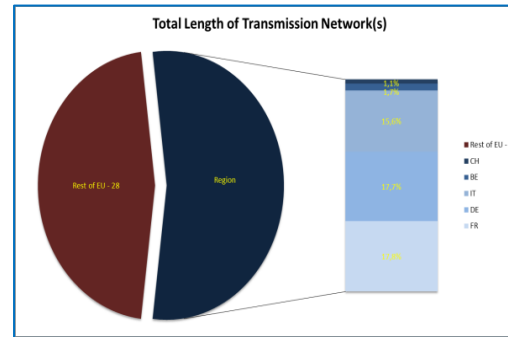
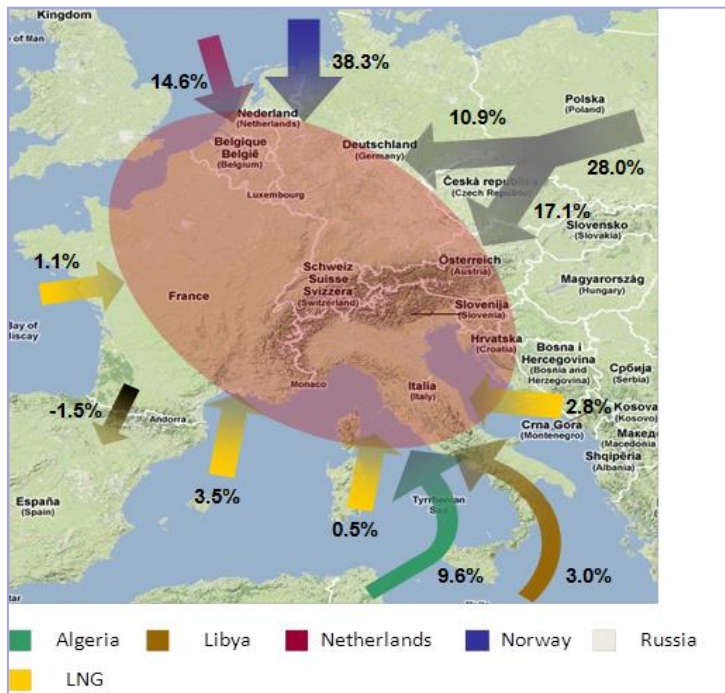
Regional overview - Status

Supply (2012)

- ✓ Russia
- ✓ Norway
- ✓ The Netherlands
- ✓ Algeria
- ✓ LNG
- ✓ Libya

Infrastructure

- ✓ Transmission (Km and MW)
- ✓ Storages (working volume)
- ✓ LNG facilities (regassification capacity)



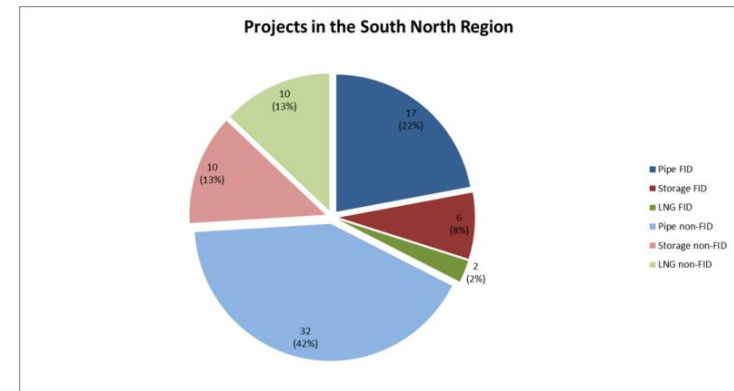
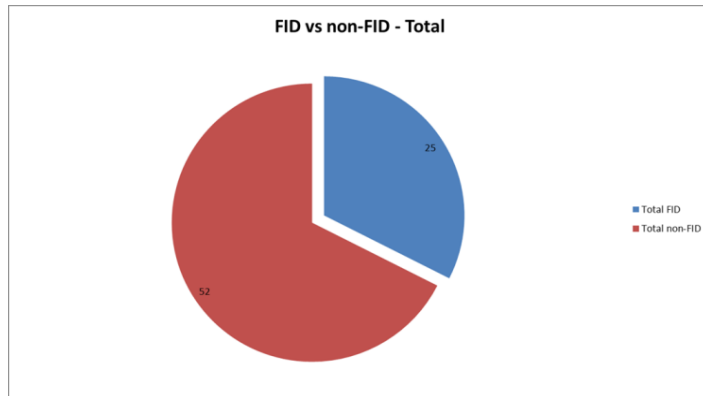


Regional overview - Evolution

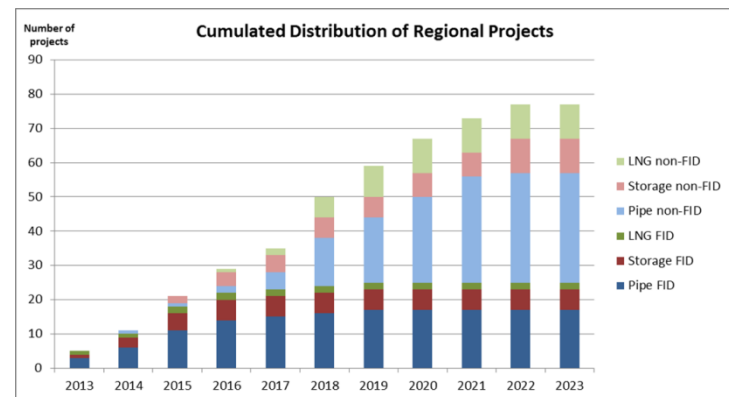
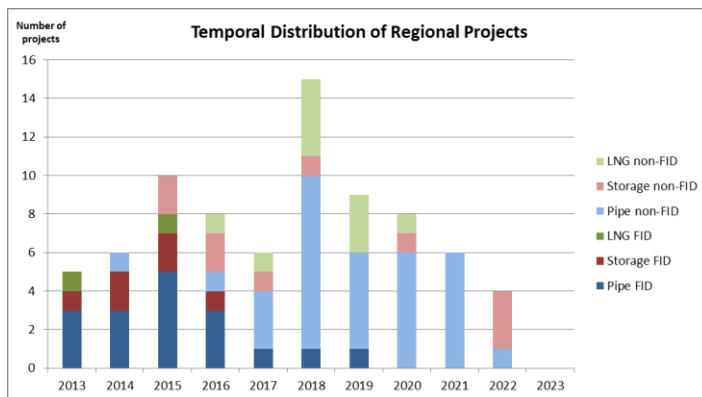
➤ Infrastructure developments indicate the Region dynamism from a **planning perspective**

➤ Projects **type** and **status**

- ✓ Pipes
- ✓ Storages
- ✓ LNG
- ✓ FID
- ✓ Non-FID



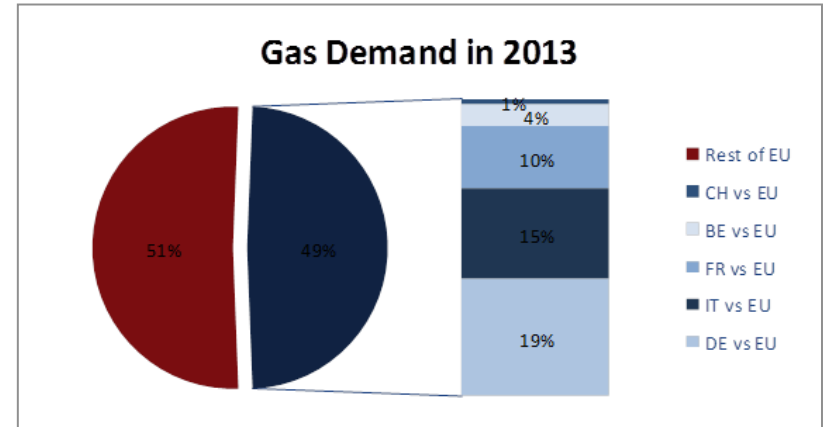
➤ Temporal and cumulated distribution of Regional projects





Demand Elements and Market Analysis

- Regional annual gas demand: near **50%** of the total EU annual gas consumption in 2013
- Forecast demand trends: gas consumption foreseen generally **stable** on a ten year basis
- The **correlation of prices** between gas hubs increased as sign of well-connected infrastructures improved by European rules developments
- **SNC** with a substantial role to further support **market integration**



Interconnection Points in the South-North Corridor

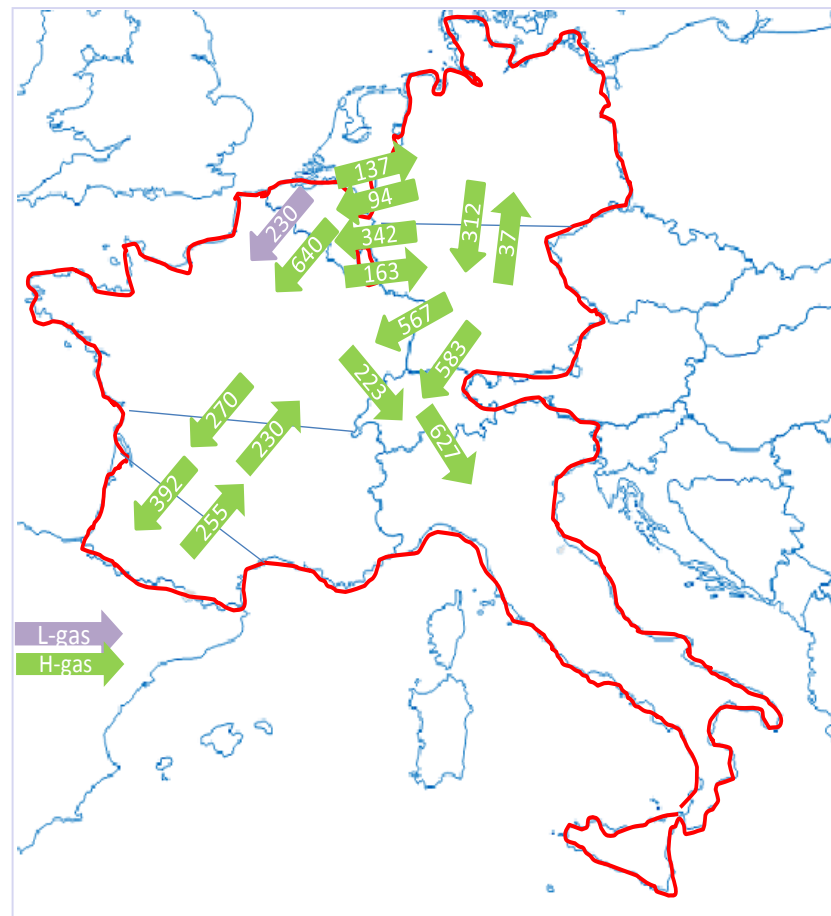


➤ IP analysis:

- ✓ technical and booked capacities
- ✓ flows
- ✓ price spreads

➤ Interconnections between SNC countries demonstrating an **already good degree of flexibility** for shippers

➤ Thanks to **PCIs**, especially linked to developing **reverse flow capacities**, further improvements expected





Gas – Electricity links: forecasts

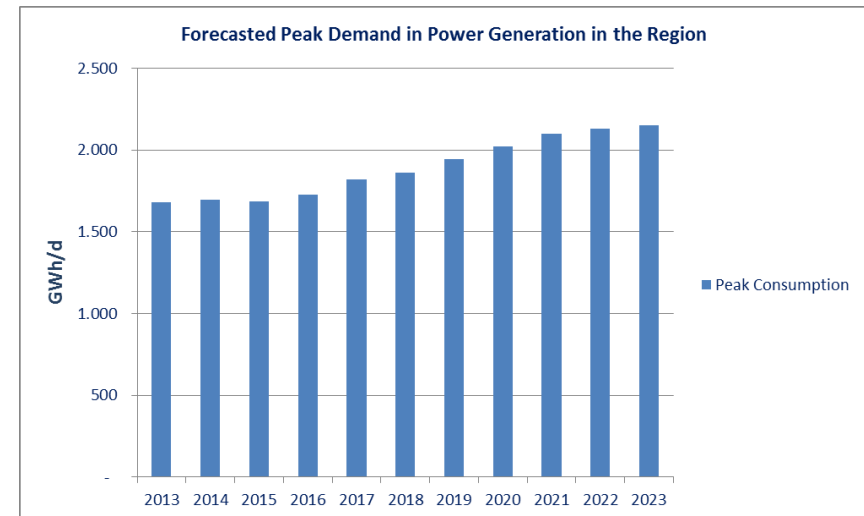
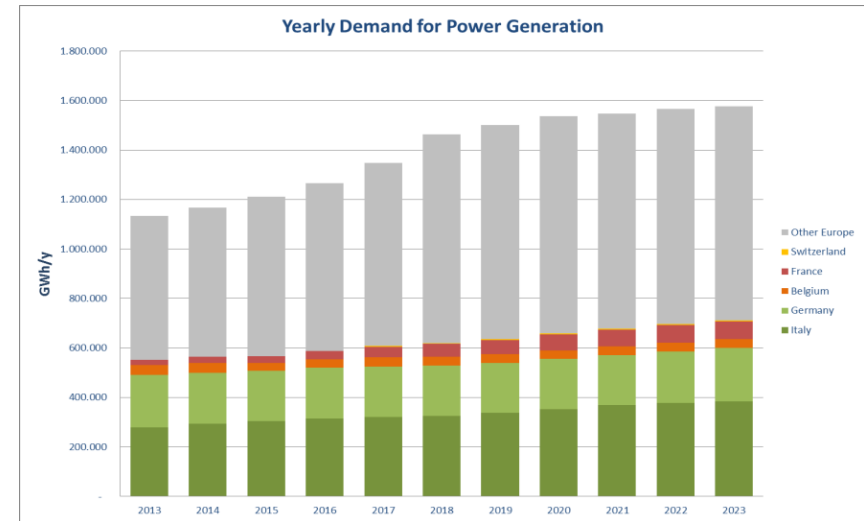
➤ Gas demand for **power generation**

expected to increase:

- ✓ As yearly values
- ✓ For peak demand requirements

...subject to materialisation of EU and national energy policy elements

➤ **Intermittency** of **RES** and back-up role of natural **gas** as key-link for a sustainable and effective EU energy policy

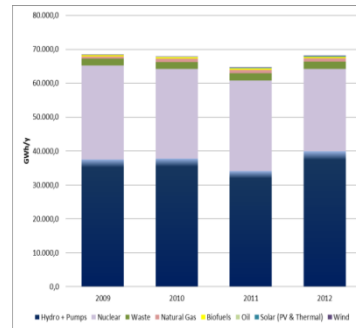




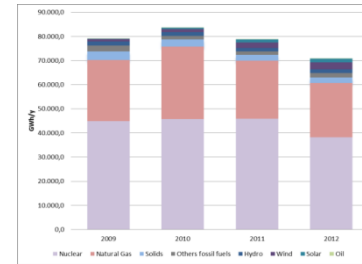
Gas – electricity links: historic overview

- Country-based screenings of power production (period 2009-12)
- ✓ current levels of prices penalise gas compared to other sources (especially coal)
- ✓ incentives to RES exacerbate the situation, if not accompanied by an effective ETS

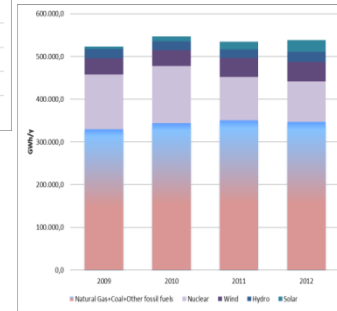
France



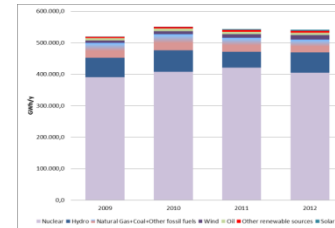
Belgium



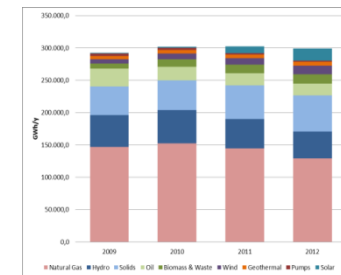
Germany



Switzerland

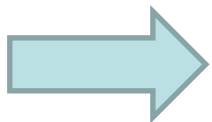


Italy



Key-elements:

- Renewable sources inherent **intermittency**
- Stringent **environmental objectives** (CO₂ binding targets)
- Internal **energy policies** (shut-down or reduction of nuclear)

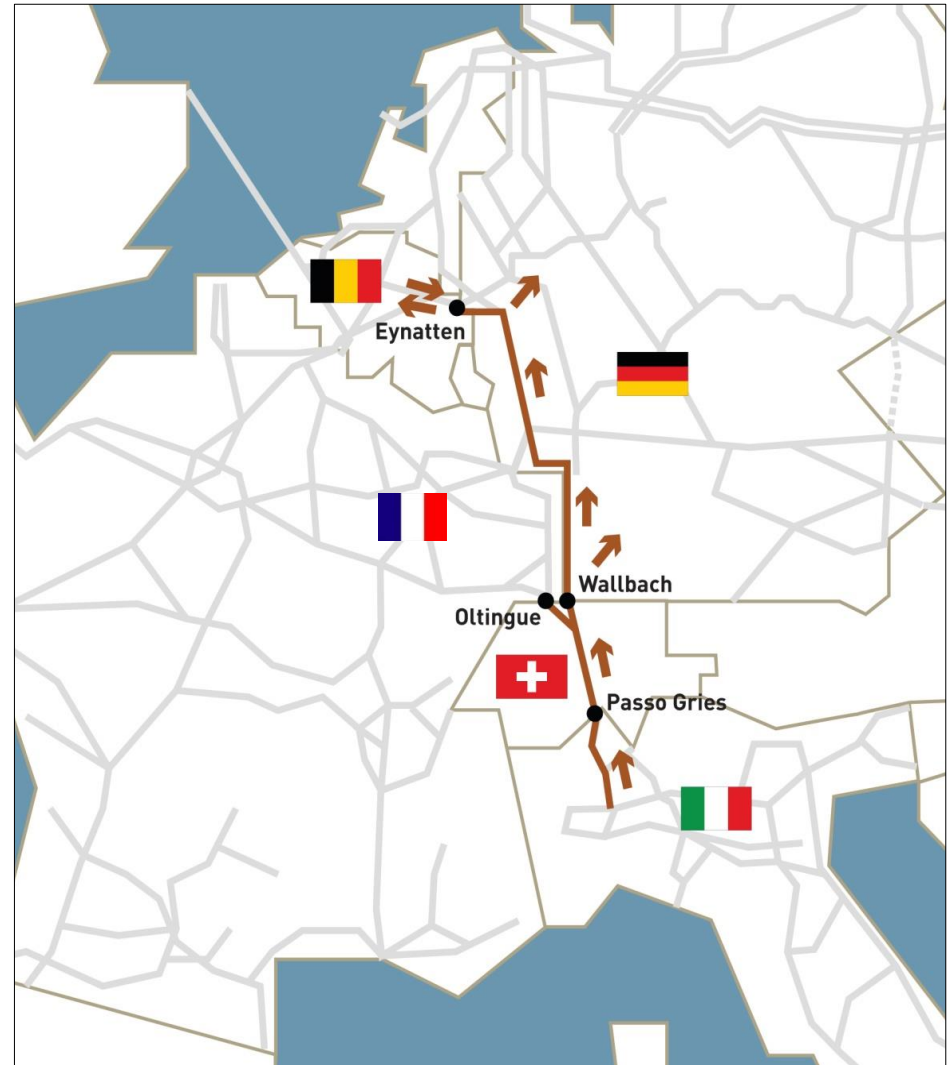


all elements creating a requirement for back-up, flexible electricity generation: gas best-placed to tackle these challenges



South – North Corridor

- **Today:** gas flows along the SN Corridor oriented from North to South
- In the medium to long term there is now a **potential** to build up the capacity for a new pattern of flows, from the South to the North of Europe
- A new pattern of flows which would clearly improve European:
 - ✓ **security of supply**, creating a new RF link and providing additional supply diversification
 - ✓ **competition** by connecting the main EU gas hubs and facilitating their integration into the Internal Energy Market





South – North Corridor: Rationales, description & PCI Status

➤ Rationales

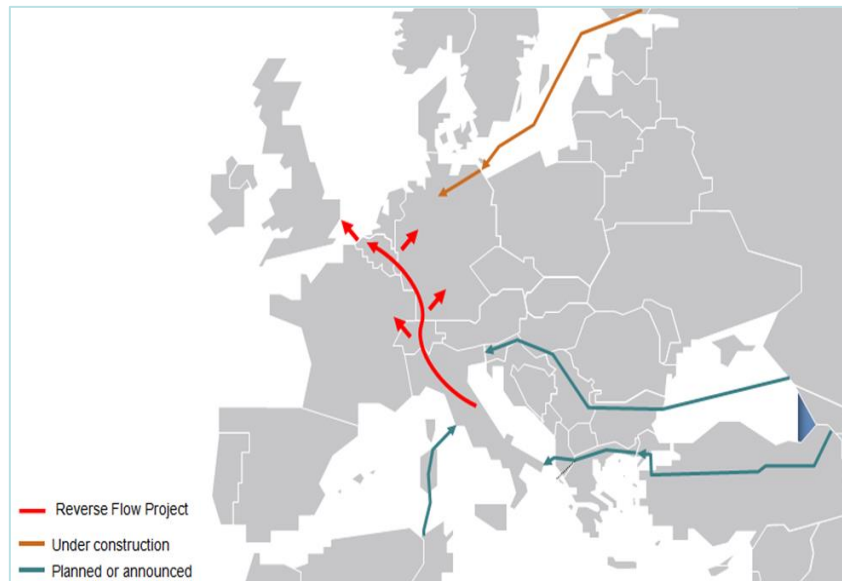
- ✓ Changing Supply and Demand patterns (decreasing Northern EU indigenous reserves & new supply sources for the region)
- ✓ **Diversification of sources** and **security of supply** in a cost-effective way (“RF nature”)
- ✓ **Increased flexibility** enabling gas flows dynamics linked to price spread signals

➤ IP approach description

- ✓ Snam Rete Gas (Italian section)
- ✓ FluxSwiss (Swiss station adaptations)
- ✓ GRTgaz (Oltingue Reverse/Forward flows)
- ✓ TENP flow reversal and related projects (Fluxys TENP, terranets, OGE)
- ✓ Fluxys Belgium

➤ PCI Status

- ✓ **Several** South North Corridor projects in PCI list in line with EU gas infrastructure and market objectives



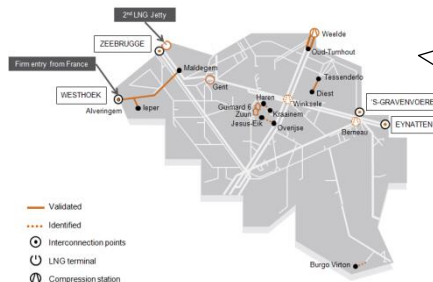
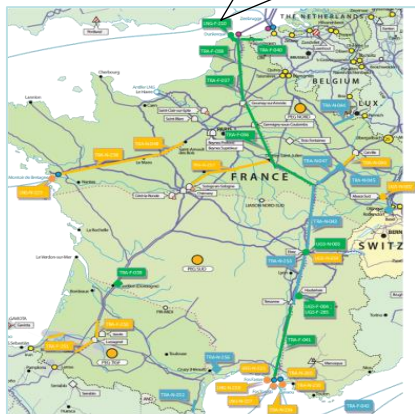
5.9	PCI Reverse flow interconnection between Switzerland and France
5.10	PCI Reverse flow interconnection on TENP pipeline in Germany
5.11	PCI Reverse flow interconnection between Italy and Switzerland at Passo Gries interconnection point
5.12	PCI Reverse flow interconnection on TENP pipeline to Eynatten interconnection point (Germany)



Brief description of other relevant projects per area

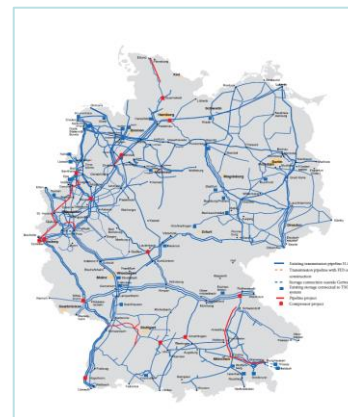
FRANCE : Investments for better integration of NW EU with South Region:

- Core network reinforcements in the northern area (Arc de Dierrey: BE-FR “Dunkirk”, FR-LU and FR-DE interconnections)
- Projects connecting LNG in South Region with North-West EU (north-south pipelines Val de Saône; Arc Lyonnais; Midcat)



BELGIUM : Investments to link Dunkirk and Zeebrugge LNG connections to the German markets:

- New pipeline Alveringem - Maldegem (FID)
- Further development of the Zeebrugge LNG terminal (non-FID)



GERMANY : Network development investments with main drivers:

- L/H gas market conversion needs
- Rise in demand for H gas supplies
- Greater capacity required for gas storages

ITALY : around 1400 km of new pipelines and 300 MW of new compression capacity:

- Development for new imports from the South
- Import developments from North-East
- Additional Southern developments





Other Investments Relevant for the Region

➤ Investments stretching across more than one country

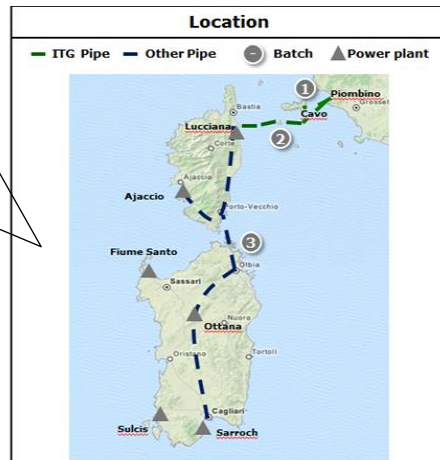


➤ **TAP :**

- End of 2013 FID on extracting gas from the Shah Deniz II gas field in Azerbaijan
- Key for TAP next steps toward commissioning
- Potential available imports to Europe from 10 to 20 bcm/year as from the end of 2019

➤ **ITG project :**

Pipelines connecting Tuscany region to the islands of Elba and Corse



➤ **GALSI (SRG) :**

New transmission capacity at the entry point of Porto Botte in Sardinia of 24 MSm³/d

➤ **Cyrénée (GRTgaz) :**

Connect Galsi to Corsica



Network Modelling

- **New section** developed thanks to ENTSOG support and network modelling tool
 - ✓ 156 cases processed for this specific GRIP
 - ✓ Two specific additional **infrastructure clusters** (all PCIs and only core SNC projects)
 - ✓ New **demand scenarios** introducing macro-areas homogeneity (NW; CEE; Mediterranean)

- **Results**
 - ✓ Flow requirements identified along S-N corridor for specific S/D configurations
 - ✓ Potential exploitation of both branches in the South to North directions as possibility in the medium-term, as from 2018 onward





Conclusions

- **Further developments** along South-North Corridor contributing to :
 - ✓ Security of Supply in Europe
 - ✓ Connection of major markets in a bidirectional way
 - ✓ Integration of new sources to the EU supply mix

- **Good collaboration** in the Region
 - ✓ Cooperation between project promoters
 - ✓ Information collection and alignment

- **Stakeholder** input welcomed for further improvements



Thank you for your attention!

SNC GRIP coordinators' contacts for welcomed feedback :

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