

# Turkish Power Trading: Obstacles & Opportunities

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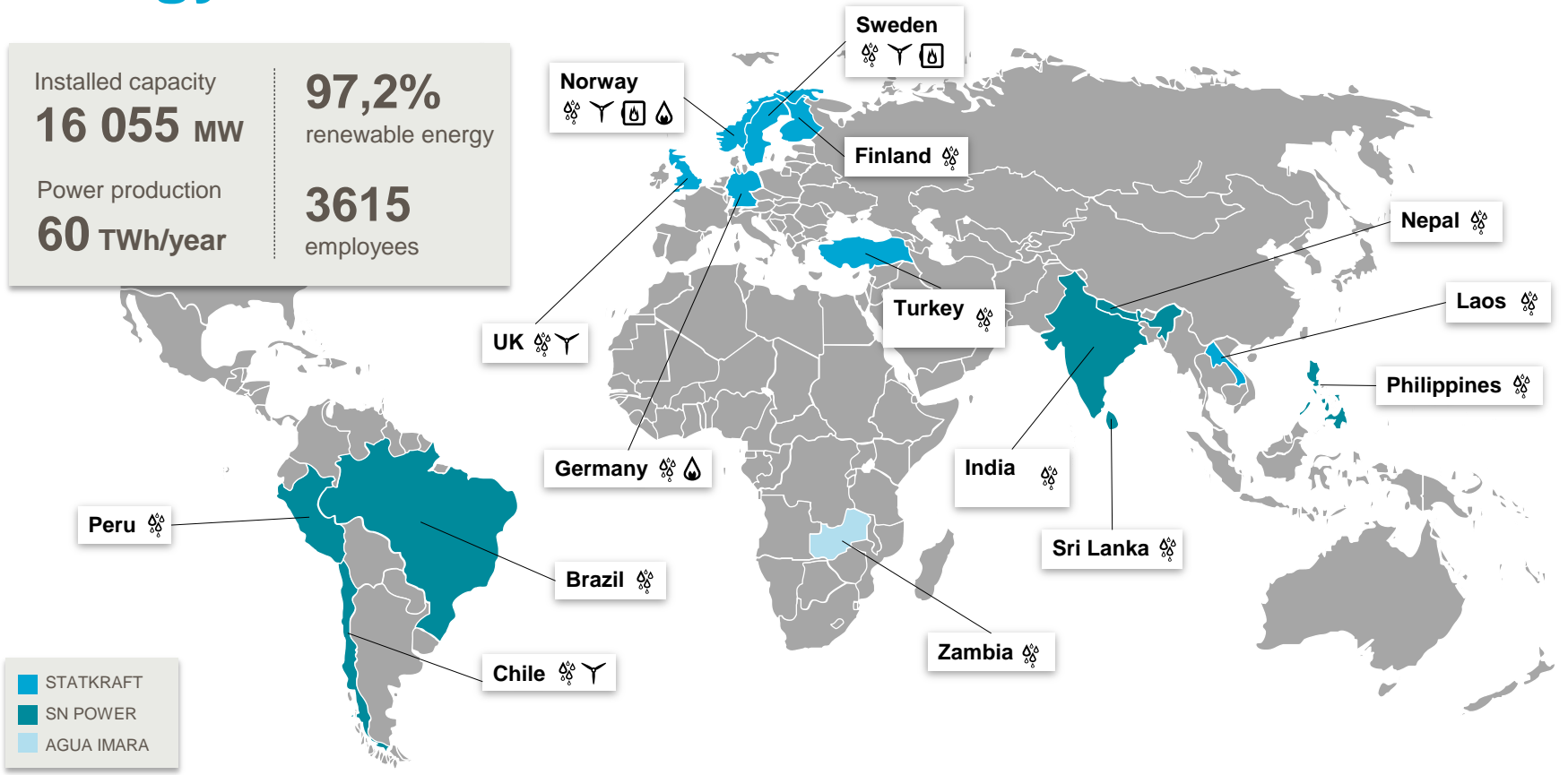
# Statkraft - European Leader in Renewable Energy

Installed capacity  
**16 055 MW**

Power production  
**60 TWh/year**

**97,2%**  
renewable energy

**3615**  
employees



**STATKRAFT**  
**SN POWER**  
**AGUA IMARA**

# A Snapshot of Turkish Power Market

Transparency & Information Access	Standardization & Risk Management	Liquidity & Trade Barriers	Reference Price
PMUM, Maintenance Information Board Bid /Offer Curves	EFET Contracts & Terms Long Form Confirmation + Bank Guarantees	Stamp Tax – Bilateral Registry under EPIAS? 'No-Flow Trans. Fee' Customs	One and only
The New Law- missing one word	Product Standardization vs. Product Differentiation	Day Ahead Volumes OTC Volumes TurkDEX- lessons?	EPIAS contracts
Private Initiative – Plant Data	Obvious Clearing Need Takasbank-Central CP N2EX / OTC solution?	Unpredictable PMUM & System Fees	Coming WE?

# Cross Border Trading



- ▶ Buy Low, Sell High! preferably Do Not Overpay the Capacity!
- ▶ Exchange/Flow of Power and Knowledge
- ▶ Counterparty Base and Market Access is the key! ES to TR; NO to ITA
- ▶ Greater Hub Idea

# Feed –in Tariff (YEKDEM) or Spot (PMUM)?

- ▶ Basic maths, will PMUM average be higher than 73 USD or not?
- ▶ Forecasting and modelling
- ▶ Secured revenue for the generators, better optimization of resources
- ▶ Leave price, balancing and the FX risks on us and focus on investments




# Long Term Security with Short Term Revenue Maximization (PPA's)



- ▶ From Pure Market Access to Complete Cash-flow Fixing
- ▶ The need for PPAs
- ▶ Early for Turkey?
- ▶ Statkraft Way!



# Before / After


**TFS**  Phone No: +44 20 7550 1725  
Email: trayport@tfsbrokers.com *Tradition Financial Services*

Trader in Focus: <None> Last Codes

Thursday 07 Apr 11	Turkey (TRL) BSLD (EET 00-24)				Turkey (TRL) Domestic Peak (EE				Turkey (TRL) Domestic Offpeak				Turkey (TRL) Peak (EET 07-23)				Turkey (TRL) Offpeak (EET 00-07			
	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty
Fri 08/04/2011																				
Sat 09/04/2011																				
Sun 10/04/2011					Turkey (TRL) BSLD (EET 00-24) Fri 08/04/2011 (Bid)															
WkEnd 9/4-10/																				
Wk15 11/04/11																				
Wk16 18/04/11																				
Wk17 25/04/11																				
May-11	10	127.00	140.00	10																
Jun-11	25	135.00																		
Jul-11																				
Q311																				
Q411																				
2012			135.00	10																

	Turkey (EET 00-06)				Turkey Gündüz (EET 06-17)				Turkey Puant (EET 17-22)				Turkey Gece (EET22-06)			
	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty	Qty	Bid	Ask	Qty
Fri 08/04/2011																
Sat 09/04/2011																
Sun 10/04/2011																
WkEnd 9/4-10/																
Wk15 11/04/11																
Wk16 18/04/11																
Wk17 25/04/11																

**TFS**  Phone No: +44 20 7550  
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Trader in Focus: TFSV, TFS Voice Traders (Frankfurt)

Tuesday 20 Nov 12	Turkey (TRY) BSLD (EET 00-24)					Turkey (TRY) BSLD INDEXED				
	Qty	Bid	Ask	Qty	Last	Qty	Bid	Ask	Qty	Last
Wed 21/11/2012										
WkEnd 24/11-25/										
Wk48 26/11/12										
Wk49 03/12/12										
Wk50 10/12/12										
Bal of Month	2	152.00	154.00	5				157.00	5	
			166.00	5						
Dec-12	10	159.00	161.90	8						
	2	158.00	165.00	5						
	5	158.00	169.50	5						
Jan-13	3	169.25	175.00	5						
	10	169.00								
	5	168.50								
Feb-13	5	168.50								
Bal of Quarter	5	162.00	167.00	5						
	5	163.00	174.00	3		5	160.00	172.80	10	
	5	161.50								
	5	161.00								
Q213	5	139.00	147.00	5				147.50	5	
	5	138.00	148.00	5						
	5	138.00	150.00	5						
Q313			179.50	5						
Q413			172.50	5						
Bal of Half Year	5	154.00	166.00	5						
Bal of Season										
Sum 13										
H113	5	153.00	159.20	5		10	158.00	162.00	5	
	5	152.75	159.25	5		5	154.00	163.50	5	
	5	152.50	162.50	5		5	153.50	166.50	10	
Win 13-14										
H213	5	170.00	174.75	5		5	163.00	175.00	5	
	5	165.00	175.00	5						
	5	162.50	175.00	5						
Q113 - Q313										
Q213 - Q413										
Bal Year	7	163.00	163.00	2				161.00	5	
Dec-12 - Nov-13	5	159.00				5	159.00			
Jan-13 - Dec-13										
Feb-13 - Jan-14										
2013	5	163.00	167.00	3		5	160.50	164.00	5	
	5	161.50	169.00	2		5	160.25	165.00	3	
	5	161.00	170.00	5		10	159.50	170.00	10	



**THANK YOU**



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# BACKUP

# Trading\_Best Practices

in Energy Markets - Statutory Publi...
Page Safety
France Germany/Austria (Phelix) Switzerland (Swissix)
14/09/2011

## Welcome to the EEX Transparency Platform

On the EEX transparency platform market-relevant generation and consumption data is published at a central and neutral site, close to the market, in order to further increase transparency on the wholesale market. This implements both statutory publication requirements and voluntary commitments by the industry.

DE/AT DE AT

### Actual production

displayed day: 2011/09/12

### Planned production

displayed day: 2011/09/12

Show all data: [Conventional](#) [Wind](#) [Solar](#)

**Legend:** ■ Conventional ■ Wind ■ Solar

### Planned and unscheduled non-usability of generating units of ≥ 100 MW

displayed day: 2011/09/12

Show all data: [scheduled non-usabilities](#) [unscheduled non-usabilities](#)

**Legend:** ■ Planned non-usabilities ■ Unscheduled non-usabilities

search term  Search

**Degree of coverage of the Statutory Publication Requirements**

DE/AT 91.98%

[More information »](#)

**Technical Status Messages**

For further information regarding technical status messages (TSM) see detail page.

[More information »](#)

**Market Information**

[2011/07/25 PRESS RELEASE : Austria's Electricity Companies publish Power Plant Data on EEX Transparency Platform Ten reporting companies... read more »](#)

[2011/07/14 Update for Unscheduled non-usabilities on 13th July 2011: Yesterday, 13th July, numerous reports got updated on the Transpare... read more »](#)

DATA TABLE
DATA CHART
AGGREGATED CURVE

14/09/2011

14/09/2011

12-13

Price: 59.4400 €/MWh Volume: 40,676 MWh

EPEX SPOT  
EUROPEAN POWER EXCHANGE

Volume Sale Volume Purchase

# Trading\_Best Practices

RTE data | EPEX data | UFE data | Day 12/09/2011 | J+1 | Medium/long term

Bookmark (reset)

**Load**

- ✓ Daily load
- ✓ Losses forecast
- ✓ Daily margins

**Generation**

- ✓ Wind power generation forecast
- ✓ Generation availability forecast
- Unplanned outages

**Interconnections**

- ✓ Balance of exchange programs
- ✓ Scheduled exchanges by border
- ✓ Daily forecast NTC export
- ✓ Daily forecast NTC import

**Balancing mechanism**

- ✓ Balancing trend & Imbalance price
- Balancing mechanism's warnings
- ✓ Upward balancing volume
- ✓ Downward balancing volume
- ✓ Upward balancing price
- ✓ Downward balancing price

**Wholesale market**

- ✓ Hourly Prices and volumes of EpeX Spot

**Operational data**

- Dashboard
- Data download
- Consumption in France
- Generation in France
- Wind power generation forecast
- Transfer capacities
- Balancing mechanism
- Balance responsible entity

**Daily load**

Date: 12/09/2011 17:00

- Power demand: 51082 MW
- P.D. forecast (D-1): No value
- P.D. forecast (D): 51100 MW

**Hourly Prices and volumes of EpeX Spot**

Volumes: 6676 MWh | Base: 45.946 €/MWh | Peak: 59.40 €/MWh

Prices: 43.22 €/MWh

**Generation availability forecast**

Nuclear: 40000 MW | Coal: 3820 MW | Gas: 3219 MW  
 Fuel/gas: 4280 MW | Lake h...: 9361 MW | Hydrop...: 7848 MW

**Wind power generation forecast**

Forecast D-1: 1685 MW | Forecast D: 1816 MW (Updated at 16h)

**Balance of exchange programs**

Total export: 5419.0 MW | Total import: -331.0 MW | Balance: 2088.0 MW

**Scheduled exchanges per border**

Germany: 1300 MW | England: 1000 MW | Belgium: 675 MW  
 Spain: 800 MW | Italy: 1059 MW | Switzerla.: 2972 MW

**Daily margins**

Morning Peak (08:30 - 14:30) | Evening Peak (Unavailable)

MW: 7315.4

**Balancing trend & Imbalance price**

€/MWh: 00:00 (37) | 00:30 (59)

Electricity demand tracking in real time, associated generation mix and CO2 emissions

Generation mix at 17:20

- Nuclear
- Fuel/gas
- Coal
- Combined cycle
- Wind
- Hydro
- Other special regime
- Int. exchanges (-)

Generation | Generation associated CO2

Demand (MW) at 17:20 of 09/12/2011 | Real = 35299 | Forecast = 35223 | CO2 Emissions (t/h) = 10603

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# Trading\_Best Practices

Last updated plant: **Grohnde**  
12/09/11 15:31 GMT

Summary View:  Show  Hide

**PLANT INFO**

Name: Herdecke

Plant owner: Statkraft

Plant type: Gas

Plant city: Herdecke

Country: DE

Last updated: 12/09/11 15:30

Output (MW): 393

Capacity (MW): 425

**Summary View: Fuel Type Output**

Fuel	Capacity	Output	%
	772	-20	-3
	290	0	0
	4790	230	5
	9567	2728	29
	15970	5836	37
	20452	10775	53
	27744	15113	54
	17320	10184	59
	21348	13906	65

**ALERTS**

12/09/11 14:00 **Wind TSO E.ON** reported: Genscape Alert: Output rose above 6800 MW

12/09/11 14:00 **Wind TSO Vattenfall** reported: Genscape Alert: Output rose above 4800 MW

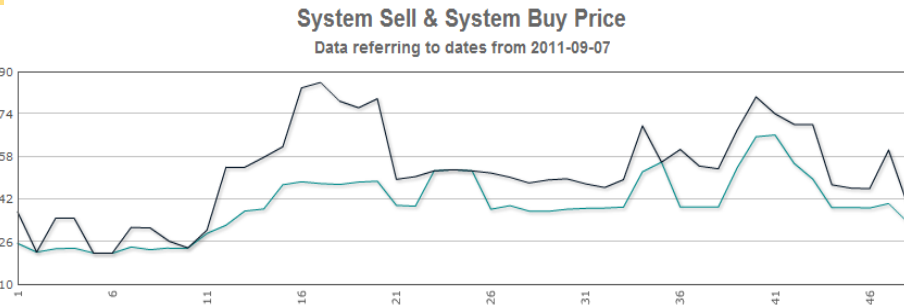
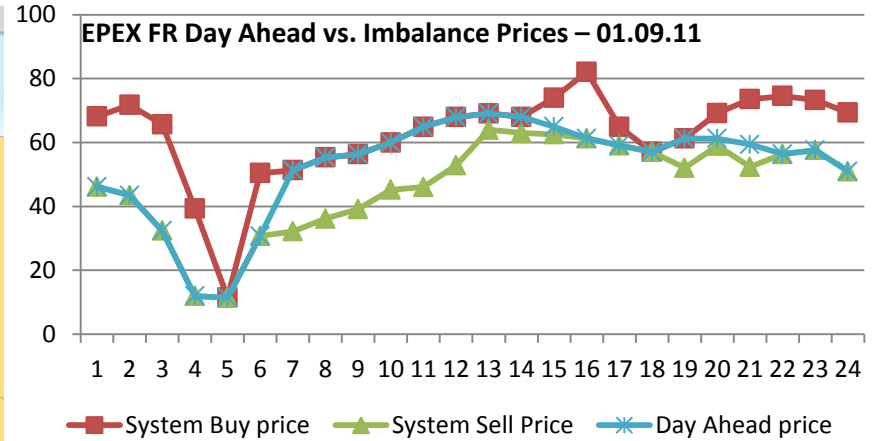
12/09/11 12:30 **BKX** reported: Genscape Alert: Output fell below 100 MW

12/09/11 12:16 **Herdecke**

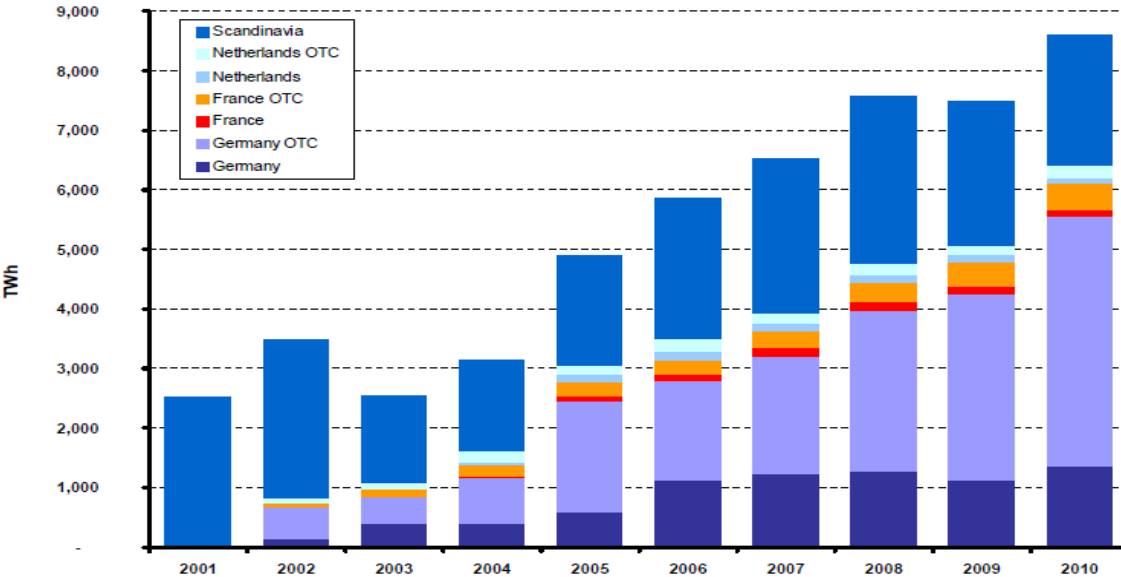
**NOTES**

All contents and information copyright Genscape International, Inc. 2002-2010 (c) Patent EP 1297347. Patents Pending.

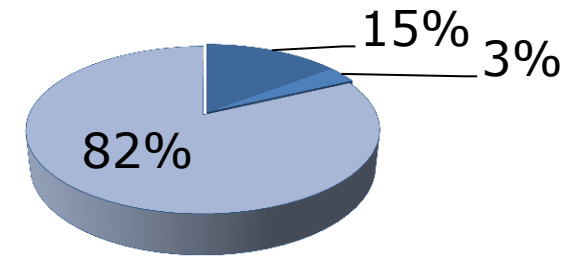
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# Trading\_Back to the Playground



**2011 OTC and EEX Volumes in France and Germany**



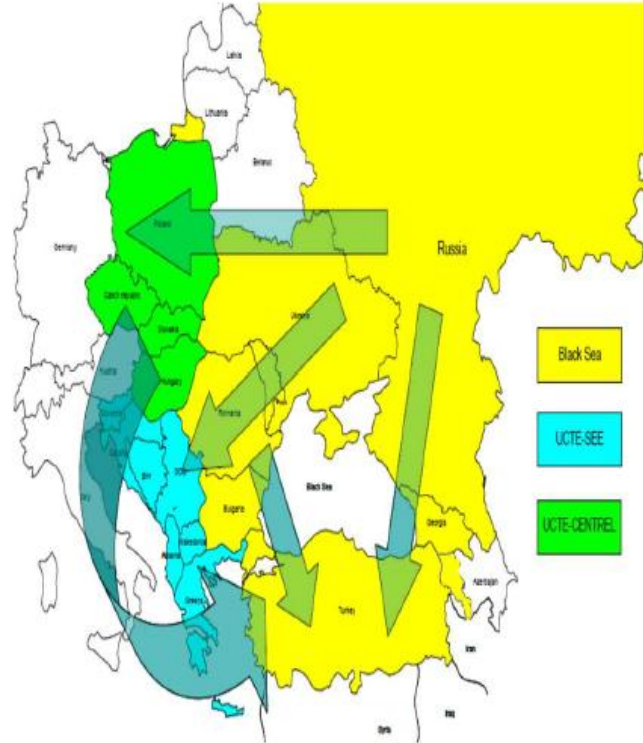
■ EEX Fwds    ■ Epex spot  
■ OTC DE+FR

- Over the Counter Trading dominates the European Power Markets

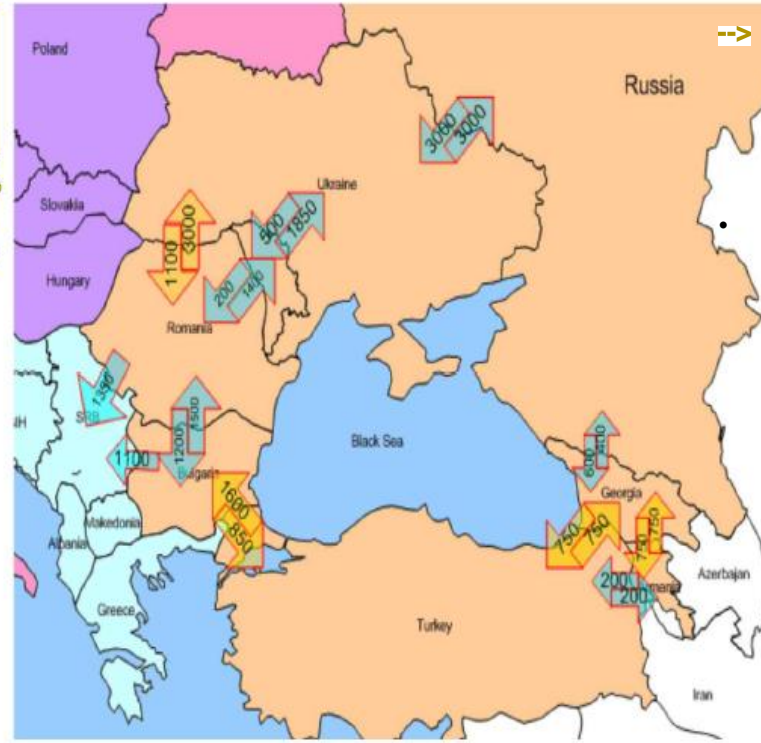
43 OTC + Clearing is the most preferred option for the Traders



# Interconnecting Turkey



Black Sea region realistic power exchange directions by 2015



Forecasted Cross Border Capacities by 2015

Interconnection Projects in the Pipeline:

- **Black Sea Regional Transmission System**

- Two synchronous zones: West (Romania, Turkey, Bulgaria /ENTSO-E), East (Ukraine, Russia, Moldova, Georgia, Armenia, Azerbaijan)

- Est. Completion by 2015

# Interconnecting Turkey

## --> MEDRING & Eight Countries Interconnection Project

- Launched in year 2000, co-financed by the EC and led by Europe and Southern/Eastern Mediterranean Countries (SEMC)
- Once complete, electricity exchange in the region would increase 75 TWh and expected energy not supplied to be reduced by 12 TWh
- Five sub projects:
  - Euro-Maghreb interconnections
  - the Maghreb interconnection
  - the Egypt-Tunisia-Libya-Algeria-Morocco (ETLAM) interconnection
  - the Egypt-Iraq-Jordan-Lebanon-Libya-Syria-Turkey (EIJLLST) interconnection (Palestine joined afterwards)
  - Turkey- ENTSO-E interconnection
- Turkey has a key role in this project





**THANK YOU**



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