

EBRD: Gas & Energy Infrastructure Finance

11th SE Europe Energy Dialogue

Thessaloniki, 27 June 2018 – Francisco Fortuny



European Bank
for Reconstruction and Development



1. Introduction to the EBRD
2. EBRD Natural Resources – Approach and Priorities
3. Working together

Appendix

EBRD Products & Due Diligence

EBRD Case Studies

Introduction to EBRD

Who we are



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Introduction to EBRD

EBRD Natural Resources

Working Together

EBRD Promotes transition to market economies whilst fostering sustainable development and inclusive growth.

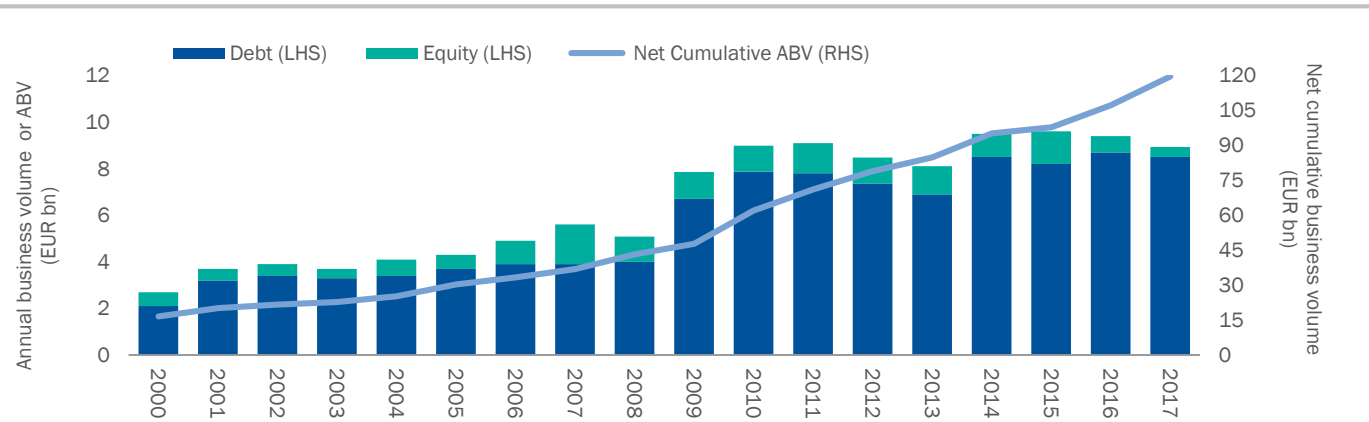
67 countries and two EU bodies.

EUR >120bn invested since 1991

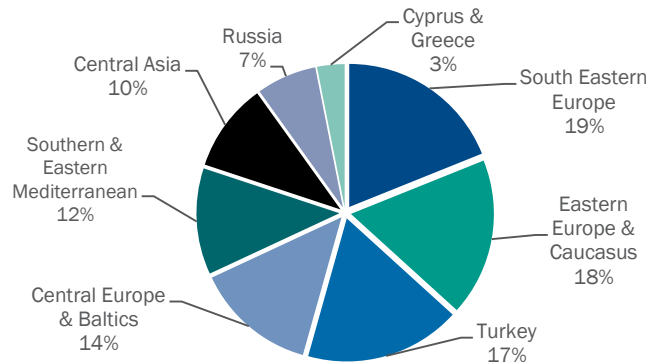
>5,000 projects since 1991

EUR 9.7bn across 412 projects, 71% private sector and 95% debt in 2017.

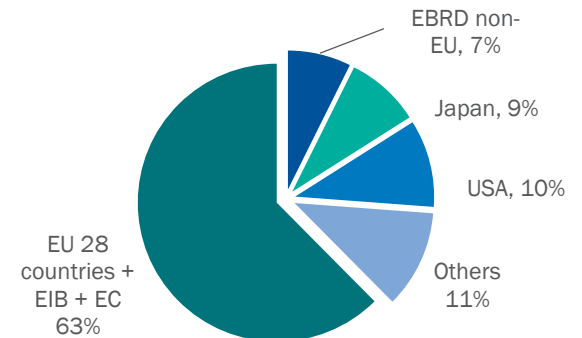
Cumulative Business Volume (excluding Guarantees)



Country Group Portfolio Distribution



Shareholding Structure



Introduction to EBRD

Where we operate



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Introduction to EBRD

EBRD Natural Resources

Working Together



EBRD Natural Resources

A key investor in the Natural Resources sector of SE Europe



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Introduction to EBRD | **EBRD Natural Resources** | Working Together

EUR 1.9bn*

investments in the SEE natural resources sector since 2014

EUR 8.5bn*

Portfolio comprising:
Debt (corporate, PF)
Equity (listed, private)
Bonds
Mezzanine

30+ bankers

London, Athens, Istanbul,
Bucharest, Sofia, Belgrade

Tech. Coop.

Energy Audits
E&S capacity building
Tariff reform
APG Abatement & Mitigation
National Energy Strategy
Legal/regulatory capacity
Gender/Inclusion
SOE Corporate Governance

| | | | | |
|---|--|---|--|---|
|  Transgaz 2018, Romania EUR 60 million Sovereign-guaranteed loan BRUA gas pipeline development |  Southern Gas Corridor CJSC 2017, Azerbaijan USD 500 million Sovereign-guaranteed loan TANAP gas pipeline development |  Black Sea Oil & Gas 2017, Romania Undisclosed Minority equity investment Upstream Gas Development Project |  Hellenic Petroleum 2017, Greece EUR 28.3 million Eurobond subscription Renewable Energy Projects |  Ungeni-Chisinau Pipeline 2016, Moldova EUR 41 million Sovereign loan Gas pipeline development |
|  TÜPRAŞ 2016, Turkey USD 150 million Senior Loan Oil refinery modernization |  Energean Oil & Gas 2016, Greece USD 75 million Senior loan Onshore & Offshore oil field development |  NAK Naftogaz 2015, Ukraine USD 300 million Trade finance facility Gas transmission & wholesale |  PJSC Ukrtransgaz 2014, Ukraine USD 150 million Sovereign loan Gas transmission & wholesale |  Romgaz 2013, Romania USD 50 million Initial Public Offering Onshore gas extraction |
|  MOL - INA 2010, Croatia EUR 150 million Senior loan Oil refinery modernization |  BH-Gas 2010, Bosnia-Herzegovina EUR 19 million Senior loan Gas transmission network |  Srbijagas 2010, Serbia EUR 150 million Sovereign loan Gas transmission network |  MOL / MMBF 2009, Hungary EUR 200 million Senior loan Gas storage development & operation |  Plinacro 2009, Croatia EUR 70 million Sovereign loan Gas storage development & operation |

* Including Ukraine and investments in the mining sector

EBRD Natural Resources

Emerging gas markets and the low-carbon transition in SE Europe



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Introduction to EBRD

EBRD Natural Resources

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Challenges

Climate change

Need to reduce GHG emissions (NDC COP 21)

Air Quality

is a critical social concern in SEE

Declining capex

leads to RES expansion (intermittence)

Gas-to-gas competition

is changing the Gas pricing terms

Opportunities

More gas from diverse sources (US, Asia, Black Sea, East Med.) is traded globally.

More gas delivery options

flexible supply options (FSRU), pipelines (SGC), interconnectors

More markets

Regulatory reforms led to flexible trading in national and regional markets.

Roles of gas

Fuel switching from more carbon-intensive sources, if done sustainably

Reducing air **pollution** by replacing heavy fuels

Delivering **secure** and flexible energy systems

Supporting the scaling-up of **intermittent** renewables

Risks / Constraints

Methane emissions

The expansion of gas pipelines and LNG involves fugitive emissions.

Technological competition

Gas competes with other less carbon-intensive sources (RES)

Limited interconnectivity

and access to international gas markets in SEE.

Investment options

Modern Pipelines, LNG, UGS

Fugitive emission abatement

Energy Efficiency (heat recovery)

Intermittent generation (e.g. peak power)

3EP, TPA, real unbundling

Physical & Virtual Reverse Flow

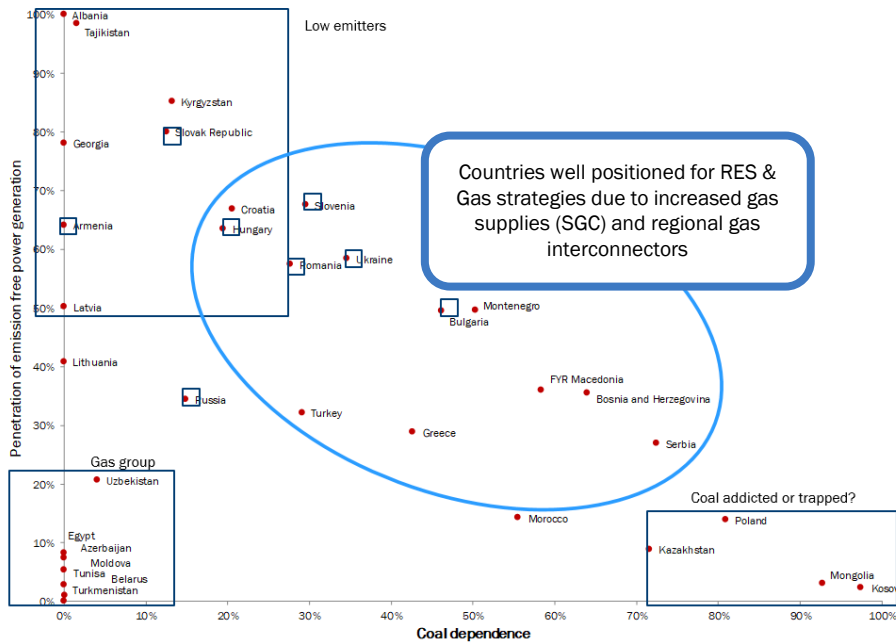
Liquid Hubs

Market connectivity & Maturity

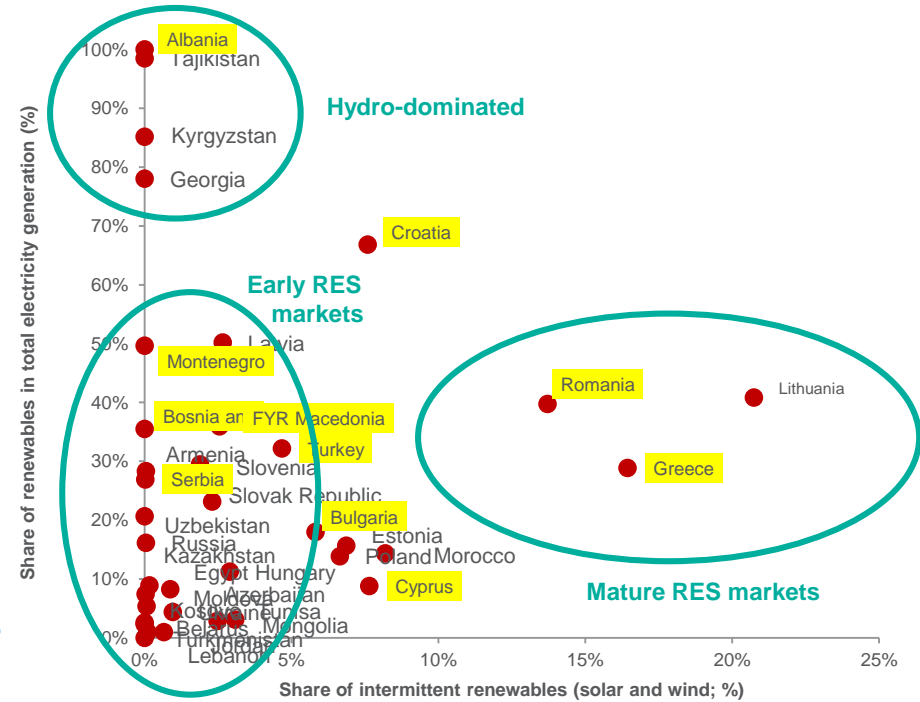
Changing role of gas depending on context

Investment must attend specific considerations

Decarbonisation: emission free generation vs. coal dependence



Renewables in generation mix (%) vs. intermittent renewables



Hindrances to gas penetration in SEE

Old, coal-reliant generation

Intermittent RES and grid balancing

Seasonal fluctuations (heating)

Low storage capacity

Lack of liquid hubs (oil indexing)

Actions to promote RES

Diversify from Hydro-dominance

Establish supporting regulation

Adapt market functioning

Provide project finance support

Deploy flexible gas assets / connections

Competitive

SOE privatisation – *Romgaz IPO*

Energy Community Treaty alignment – *NAK Naftogaz*

Transparency and standardisation of gas procurement – *NAK Naftogaz, BH-Gas.*

Third Party Access, Network Codes

Unbundling, contestability, private capacity allocation, commercial restructuring – *Srbijagas, MMBF.*

Integrated

New export/import routes and technologies – *Polskie LNG*

Interconnection with major transit routes and gas hubs – *BRUA pipeline, TAP*

Well-governed

Environmental standards and ESAP – *UkrTransgaz E&S TC, BH-Gas*

Commercialisation and corporate governance – *Intergas Central Asia (KZ), NAK Naftogaz.*

Anti-corruption/integrity procedures.

Revenue transparency undertakings (EITI)

Resilient

Financial restructuring – *Intergas Central Asia (KZ)*

Energy security, diversification of supplies – *Ungheni-Chisinau Pipeline*

Institutional skills – *SGC (TANAP)*

Inclusive

Vocational training and skills development.

National qualifications framework.

Local business opportunities (SMEs).

Gender Action Plans.

Green

Reduction and avoidance of GHG emissions through modernisation and new technologies – *EGAS heat recovery systems (EG)*

Decarbonisation: coal displacement through gas expansion – *TAP*

EBRD Natural Resources

EBRD gas investments across South-Eastern Europe

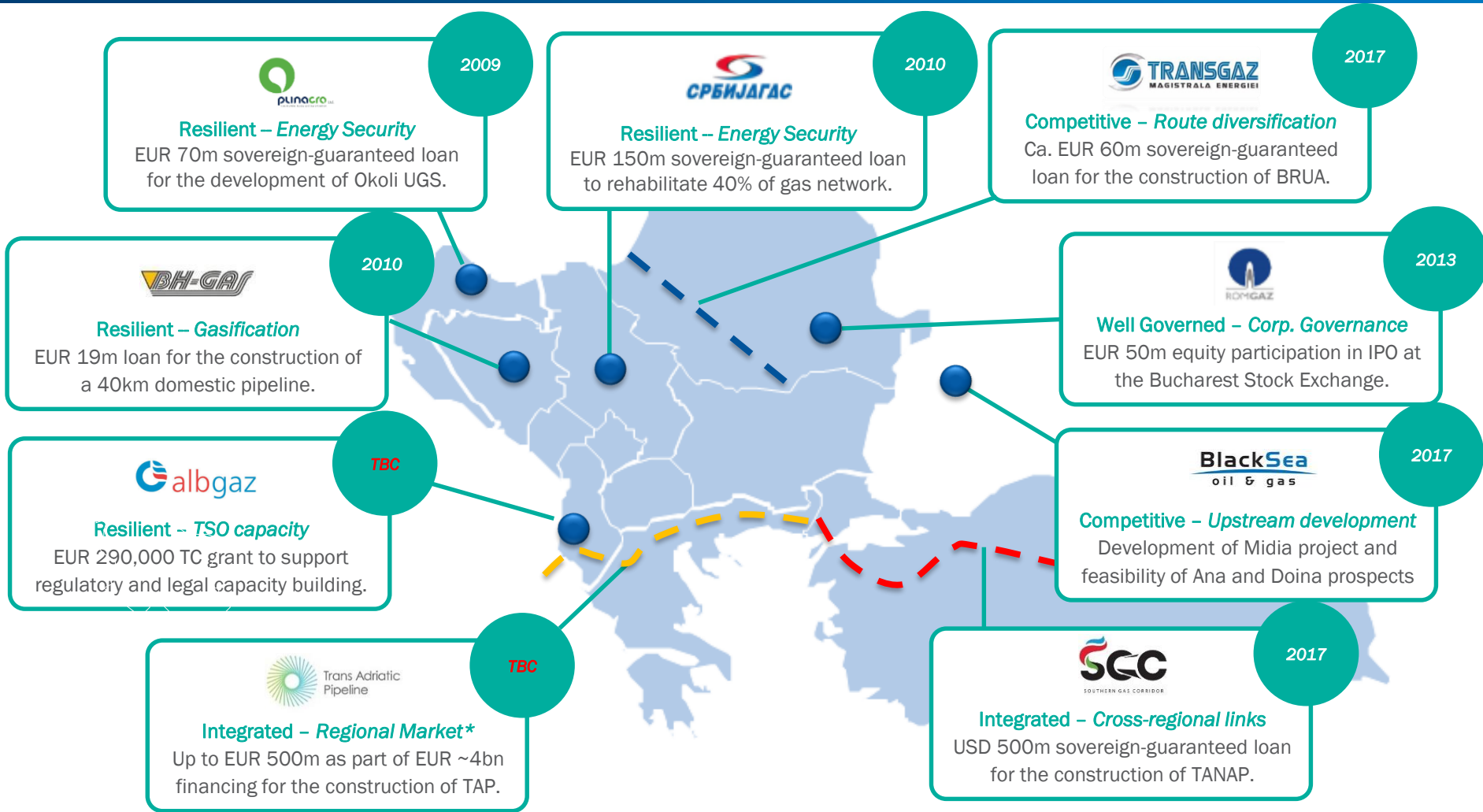


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Introduction to EBRD

EBRD Natural Resources

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*Project under consideration by the EBRD Board.

Working Together

Case Study: Trans Adriatic Pipeline*



EUR ~6bn project to build a **878 km** pipeline across Greece, Albania and Italy, including a 105 km offshore section, 4 compressor stations, 1 control centre

EUR ~4bn financing package under consideration to TAP AG (Switzerland) including the EIB, EBRD and the ECAs of Germany (EH), France (BPI) and Italy (SACE)

10 bcma reverse-flow pipeline will delivered to 9 European buyers in Italy, Greece and Bulgaria - the capacity can be expanded to **20 bcma**

Impact: Resilient & Integrated

Innovative regulatory framework in SEE (ITO model)

Regional connectivity, diversification of routes and sources, hub liquidity (PSV)

Energy security (N-1 tests), reverse flow

Non-discriminatory allocation of Expansion Capacity

Regulatory spill-over, Albanian TSO (Albgaz) Technical Assistance

Risks & Mitigants

Construction – *strong sponsors and EPC structure*

Downstream-Upstream – *robust ship-or-pay contracts, strong value chain*

Tariff/Sales/Volumes – *long-term firm capacity, fixed tariff, substantial gas reserve*

Political/Regulatory – *host government agreements, benchmarking agreements*

Comprehensive ESIA package disclosed in Q4 2017 to the public



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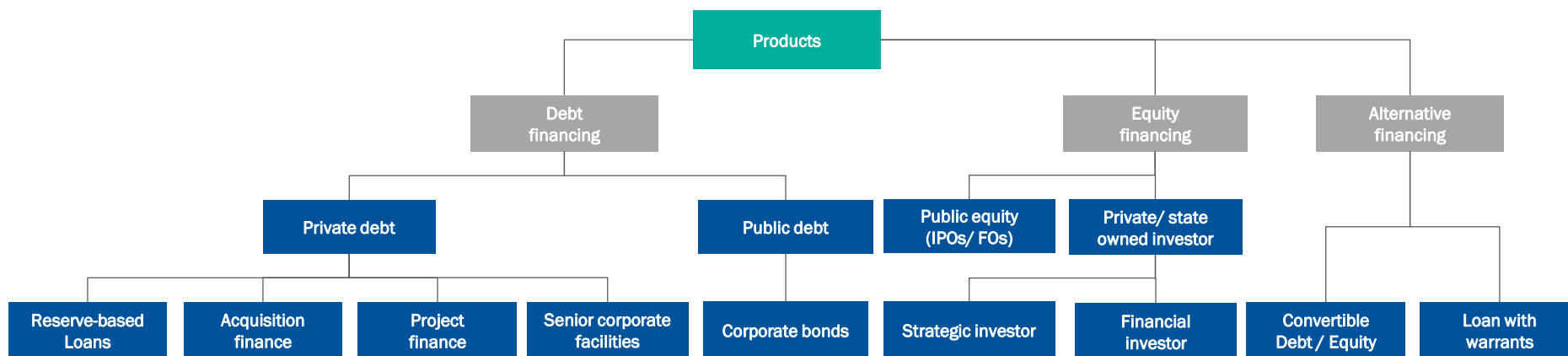
www.ebrd.com





EBRD Products & Due Diligence Process





Debt

Flexible loan structure.

Senior/subordinated, mezzanine, project finance, convertible debt, reserve-based or subscription of bond issues.

Up to 1/3 of the total project costs.

Long tenors. 5-10 years as per reserves tail (30-35%).

Capital mobilization. A/B finance with preferred creditor status or parallel loans with commercial banks

Multi-currency lending. EUR, USD or local currency.

Equity

Non-controlling minority. Up to 20% stake.

Support to strategic investors.

Share of pre-development and development-stage risk.

Long term partnership. Long exit horizons.

IPO/SPO anchor investor.

Credibility and comfort to investors and financiers.

Board representation. Neutral party (*honest broker*), Technical/Commercial Nominees, good governance.

Working Together

Financing across the Natural Resources value chain in SE Europe



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All stages

- Pre-development
- Field/project development
- Project expansion
- Remediation
- Service providers

All products

- Project Finance
- Corporate Debt
- Reserves Based
- Revolver Debt
- Bonds.
- Mezzanine / Convertible debt
- Listed equity (IPO, SPO)
- Private equity (structured)

Impact

- Green : APG, energy efficiency
- Well governed: E&S, EITI, PWYP
- Interconnected: gas linkages, hubs
- Inclusive : youth/gender initiatives
- Competitive: new technologies
- Resilient: regulation, finance

Oil & Gas: upstream, midstream, downstream

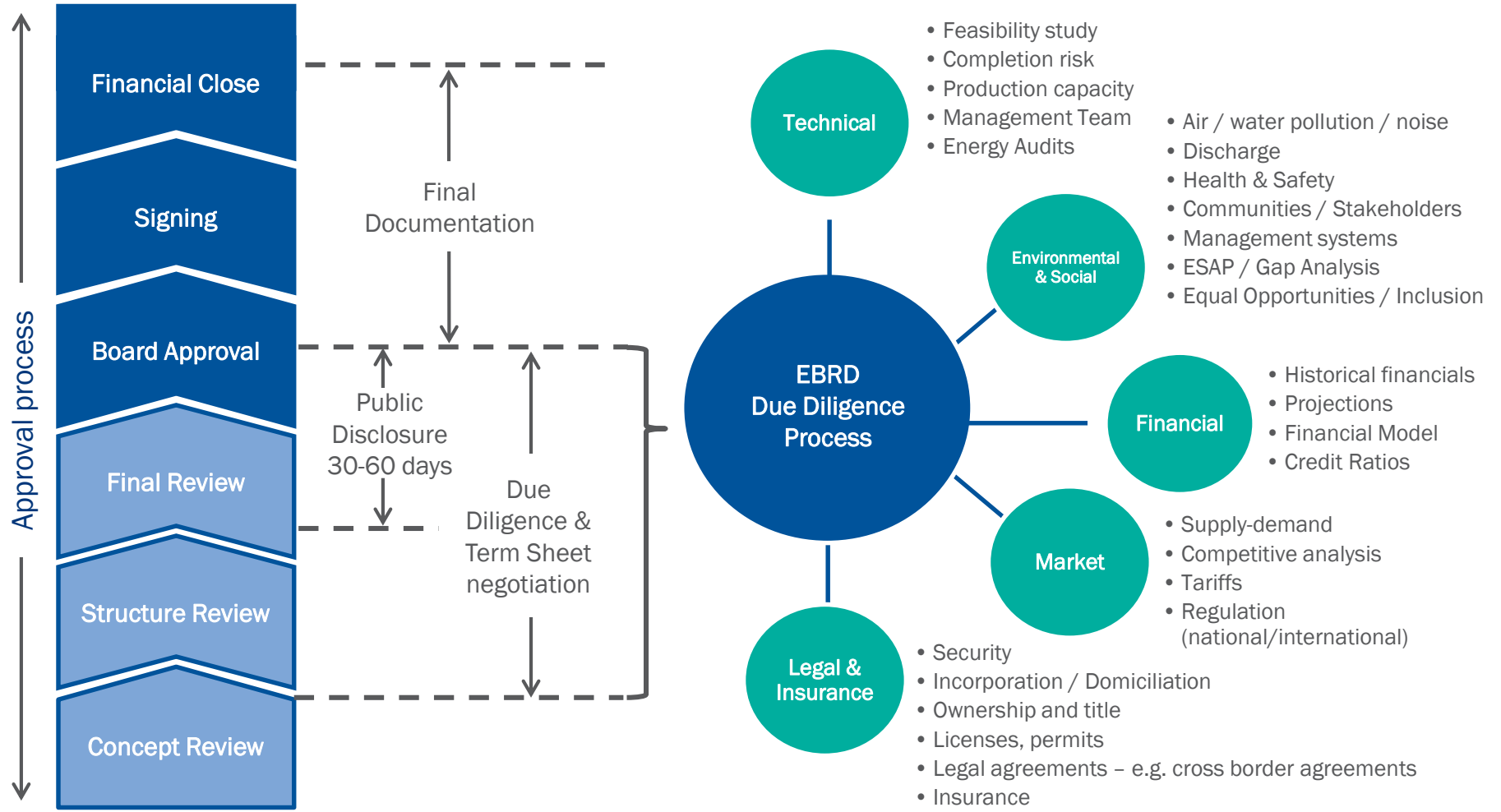
| | Exploration / Early Stages | Development / Growth | Mature / Expansion |
|----------------------|----------------------------|----------------------|--------------------|
| Equity | | | |
| Mezzanine / Sub-Debt | | | |
| Reserves Based | | | |
| Senior Debt | | | |

Working Together

Approval process and due diligence



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3. Working Together

Cross-country Gas Infrastructure Project Finance – Key risks



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Introduction to EBRD

EBRD Natural Resources Track Record

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| | |
|---------------|--|
| Supply Risk | • Variability of use, upstream/downstream interface → Mitigant: firm capacity input/supply, firm LT GTAs. |
| Market Risk | • Variability of quantities and/or prices → Mitigant: firm capacity, fixed tariff, price hedging |
| Technical | • Untested technologies → Mitigant: conventional technology, performance guarantees, insurance |
| Operating | • OPEX overruns → Mitigant: low opex in gas infrastructure, cost pass-through and support. |
| Environmental | • Environmental damages/liabilities → Mitigant: E&S excellence, high standards, management systems |
| Force Majeure | • Acts of God, irreversible → Mitigant: Preparedness, back-up systems, risk management studies. |
| Completion | • Development delay, overrun → Mitigant: Thorough risk examination pre-completion, turnkey structures |
| Engineering | • Failures in data, analysis, calculation → Mitigant: Insurance for E&O, quality of engineers |
| Political | • Adverse political/regulatory events → Mitigant: preferred creditor status, margin pricing. |
| Participant | • Sponsors, contractors, advisers, lenders, government, etc → Mitigant: covenant control, structuring. |
| Syndication | • Underwriting risk, different standards → Mitigant: Equator or IFC/EBRD standards. |
| Financial | • FX/IR variation → Mitigant: derivatives hedging , natural hedges. |

Project Finance Due Diligence and Transaction Structuring

Working Together

Indicative E&S Due Diligence Process



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| | | |
|----------------------|-------------------------------------|------------------|
| Introduction to EBRD | EBRD Natural Resources Track Record | Working Together |
|----------------------|-------------------------------------|------------------|

| | CONCEPT REVIEW | DUE DILIGENCE | STRUCTURE/ FINAL REVIEW | BOARD | MONITORING OF PROJECT IMPLEMENTATION |
|--|--|--|---|--|---|
| ESD ACTIONS | <ul style="list-style-type: none"> • Identification of potential E&S impacts, risks & opportunities • Project categorisation • Identification of relevant requirements • Due diligence scoping • Drafting E&S content for CRM | <ul style="list-style-type: none"> • Review existing information • Site visit (if required) • Due diligence commissioning • On-going liaison • Action plan definition • Drafting PSD content | <ul style="list-style-type: none"> • E&S info to SRM (if required) • E&S info to FRM • Define E&S monitoring requirements • Define E&S covenants for legal agreement • Define derogations to the E&S Policy (if any) | <ul style="list-style-type: none"> • E&S content for Board documents • PSD updates | <ul style="list-style-type: none"> • Addressing issues arising • Management of material changes to Projects • PSD updates • Review of monitoring reports • Site visits/inspections • Compliance verification • Approval of waivers |
| INPUTS | | | | PROJECT SIGNING | |
| Shared Information: Project & EBRD | Preliminary information Initial due diligence questionnaires | Detailed information: EIA, SIA, etc. ↓ Additional information: (if required) | Due diligence findings PR compliance data E&S Action Plan SEP / NTS Other reports | LEGAL AGREEMENT | Monitoring Plan Monitoring / incident reports 3 rd party /stakeholder communications Annual Environmental & Social Report |
| Gathered Information: EBRD & 3 rd Parties | IESE / Initial Site Visit (if required) → | EBRD/Lender's Consultant review & site visit (Cat. A & B) Baseline PR KPI's | | | EBRD/Lender's Consultant monitoring reports Latest KPI updates |
| OUTPUTS | | | | | |
| ESD Internal Process | <ul style="list-style-type: none"> • E&S content for CRM • ESDD Plan (if required) • IESE Report (if required) | <ul style="list-style-type: none"> • Due diligence ToR • E&S Assessment Report • PR compliance data • E&S Action Plan • Reviewed SEP / NTS • Outline monitoring plan | <ul style="list-style-type: none"> • E&S content for SRM (if required) • E&S content for FRM | <ul style="list-style-type: none"> • ESD content in Board papers | <ul style="list-style-type: none"> • Remedial action requests • Corrective actions • PR compliance data update • PSD updates • ESD content to Operation Change memos • Publish AESR |
| Published Information to External Stakeholders by: | | | | | |
| Project | | SEP or equivalent ESIA documents | Stakeholder engagement responses (if required) | | Public reporting (Category A projects) Interaction with shareholders |
| EBRD | | Project Summary Document ESIA documents | | Updated PSD | Updated PSD Annual Sustainability Report |



EBRD transactions: Case Studies



Gas Upstream & Infrastructure Investments in SE Europe



Signed in
2018



EBRD Finance

RON 278 million (EUR 60 million) loan to Romania's state-owned operator Transgaz M.E. for the construction of the Romanian section of a new gas pipeline between Bulgaria-Romania-Hungary-Austria gas pipeline (the BRUA pipeline).

Project

The BRUA gas corridor will help connect the countries along the route with major gas infrastructure projects such as the future TAP, other Central European gas hubs and potential Black Sea gas deposits.

Environmental Impact

Environmental and Social Action Plan (ESAP) has been agreed between EBRD and Transgaz.

Transition Impact

(1) *Competitive* – The BRUA pipeline will help to diversify the regional gas supply from its current limited number of major pipelines; (2) *Integrated* – connection of the area with future major gas infrastructure projects such as TAP, gas sources from Central European gas hubs and potential gas transportation from Black Sea deposits.

[Link to Project Summary Document](#) / [Press Release](#)

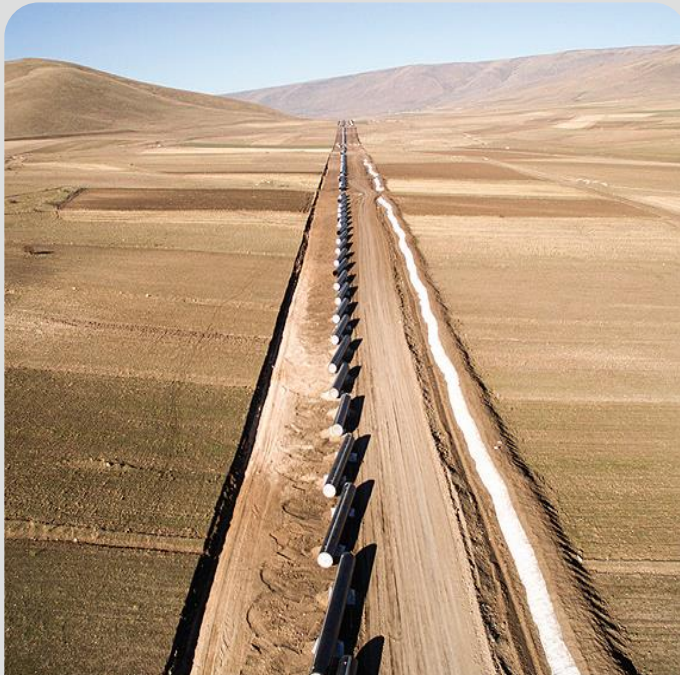
EBRD Transactions: Case Studies

Southern Gas Corridor Co., Azerbaijan – Trans Anatolian Pipeline



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Signed in
2017



EBRD Finance

USD 500 million loan to the Southern Gas Corridor CJSC, a company owned by the Republic of Azerbaijan (51%) and the State Oil Company of the Azerbaijani Republic (SOCAR) (49%), to finance its share in the Trans Anatolian Pipeline project (TANAP). The loan benefits from a sovereign guarantee.

Project

Construction and development of a 1,850 km, 16 bcm gas pipeline stretching across Turkey and connecting the Georgian and the Greek borders.

Environmental Impact

The comprehensive EBRD ESIA package was disclosed on 16 June 2017 and public consultations were carried out as per the Bank's requirements. The project is expected to support the transition towards low-carbon economy in Turkey and south-east Europe through the use of natural gas recognised to be an important transition fuel.

Transition Impact

- (1) *Resilient* – strengthening of energy market institutions ;
- (2) *Integrated* – Cross-regional connectivity between the Caspian region and Europe, enhancement of energy security.

EBRD Transactions: Case Studies

Black Sea Oil & Gas, Romania – Exploration and development



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Signed in
2017

BlackSea
oil & gas



EBRD Finance

Minority equity investment in Black Sea Oil & Gas SRL, Romanian company backed by Carlyle Group. Black Sea Oil & Gas is the titleholder and the operator of the Romanian offshore Blocks Pelican XIII and Midia XV containing the Ana and Doina gas discoveries.

Project

The financing will support the development of Midia Gas Development Project and will help finalise the commercial feasibility of the Ana and Doina gas prospects, as well as fund further exploration activities.

Environmental Impact

In case the final investment decision is made to proceed with development of the project, ESIA for field development will be done to EBRD standards whether or not the EBRD provides further financing.

Transition Impact

- (1) Improved regional competitiveness in the upstream sector;
- (2) Development of a modern legal and regulatory framework for offshore oil and gas operations in Romania.

[Link to Project Summary Document](#) / [Press Release](#)

EBRD Transactions: Case Studies

Expert Petroleum, Romania – Energy efficiency and restructuring



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2017



EBRD Finance

USD 5 million of debt financing to Expert Petroleum SRL, an oil field services company established in Romania, specialised in the enhancement of mature oil and gas fields.

Project

Investment into energy efficiency upgrades, production enhancement and optimisation of the company's capital structure.

Environmental Impact

The Company's is working together with OMV Petrom to address environmental liabilities and also replace, redevelop and decommission old and defunct equipment and facilities at 13 mature fields. The proposed investments will result in significant energy and GHG emissions savings.

Transition Impact

(1) Setting standards of corporate governance and business conduct by promoting green economy transition; (2) Demonstration of new products, as the Project will demonstrate that technologically advanced secondary hydrocarbon recovery can be run as an independent viable business.

[Link to Project Summary Document](#)

EBRD Transactions: Case Studies

NAK Naftogaz, Ukraine – Gas trade and working capital facility



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2015



EBRD Finance

USD 300 million sovereign-guaranteed revolving loan to National Joint Stock Company NAK Naftogaz, Ukraine's state-owned vertically integrated oil and gas group.

Project

Bridge financing for the purchase and sale of up to 1.1 bcm of natural gas during the winter season 2015-2016. The project aims at supporting the Ukrainian Government's policy of making NAK's operations financially sustainable by establishing trade finance mechanisms, cost recovery pricing and eliminating the need for price subsidies.

Transition Impact

The project is complementary to the earlier NAK Emergency Pipeline Upgrade and Modernization loan (signed 2014) and aims at supporting gas sector reform in Ukraine. Key elements of transition include (1) Implementation of Energy Community Treaty requirements and development of a framework for markets. (2) Improvement of corporate governance practices at of NAK's company Ukrtransgaz. (3) Increased transparency and standardisation of the gas procurement process between Ukraine and the EU vendors.

[Link to Press Release](#)

EBRD Transactions: Case Studies

BH-Gas, Bosnia-Herzegovina – Gas pipeline development

Signed in
2010



EBRD Finance

EUR 19 million senior loan to BH-Gas d.o.o. Sarajevo, a state-owned company active in transport and wholesale of natural gas in the Federation of Bosnia and Herzegovina.

Project

USD 23.5 million project for the construction of new 40km high-pressured natural gas transport pipeline to enable natural gas supply to four municipalities in Central Bosnia, providing a clean and efficient fuel alternative.

Environmental Impact

A comprehensive Environmental & Social Action Plan (ESAP) has been agreed with the client. The pipeline will provide an alternative clean energy source and reduce CO2 emissions.

Transition Impact

(1) Support reform of the natural gas sector in Bosnia and Herzegovina. (2) Technical Cooperation to improve the competitive environment in the gas infrastructure sector by enabling private companies to participate in public tenders on an equal basis. (3) Setting standards for health, safety and environmental management (HS&E) and procurement.

[Link to Project Summary Document](#) / [Press Release](#)

EBRD Transactions: Case Studies

Srbijagas, Serbia – Network rehabilitation and development



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Signed in
2010



EBRD Finance

EUR 150 million senior sovereign-guaranteed loan to Srbijagas, which is engaged in the natural gas transmission, distribution, storage and trade and is 100% owned by the Republic of Serbia.

Project

EUR 150 million project to rehabilitate 40% of Serbia's gas transmission network and develop a new gas storage facility. Through the financing, EBRD also supports the reorganisation and financial restructuring of Srbijagas and support the gas sector reform in the country.

Transition Impact

(1) Support to the ongoing unbundling process by gradually separating and auditing accounts, creating new management teams and legally unbundling transport and trade activities. (2) Demonstration of successful financial and operational restructuring. (3) Government's commitment to passing amendments to the energy law, increase the independence of the regulator and secure third party access to the country's transmission and storage infrastructure.

[Project Summary Document](#) / [Press Rel. 1](#) / [Press Rel. 2](#)

EBRD Transactions: Case Studies

MOL / MMBF, Hungary – Underground gas storage development



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Signed in
2009



EBRD Finance

EUR 200 million unsecured corporate loan to Hungarian group MOL. In 2013, MOL sold its stake in the project to the Hungarian Development Bank and the Hungarian Hydrocarbon Stockpiling Association, and the EBRD converted the remaining EUR 100 million loan into a project finance facility to MMBF, the operator of the gas storage facility.

Project

EUR 611 million project involving the completion and conversion of Szőreg-1 reservoir in the depleting Algyő oil field into an underground gas storage facility with a 1.9bcm mobile and 25mcm/day peak capacity.

Environmental Impact

Development of an Environmental & Social Action Plan (ESAP) aimed at addressing issues during project construction.

Transition Impact

(1) Transfer of development/operation of a gas storage facility for strategic and commercial purposes to the private sector, resulting in increased competition in the sector. (2) Enhancement of corporate governance standards.

[Link to Project Summary Document](#) / [Pres Release](#)

Signed in
2009



EBRD Finance

EUR 70 million senior corporate loan secured with a sovereign guarantee to Plinacro d.o.o., a state-owned company and the Croatian natural gas transmission system operator.

Project

Financing of the acquisition of Podzemno Skladiste Plina d.o.o., a company that owns a strategic underground gas storage facility at Okoli. The acquisition of Okoli will enable Plinacro to implement non-discriminative third party access to storage gas supply.

Environmental Impact

A comprehensive Environmental & Social Action Plan (ESAP) was agreed with the client. In addition, a Stakeholders Engagement Plan (SEP) was prepared.

Transition Impact

(1) Promote improvements in the efficiency of the gas storage and supply services, including commitment to rehabilitation and expansion of the storage facility. (2) Improvements in the regulatory framework for gas storage and gas market activities in Croatia.

[Link to Project Summary Document](#) / [Press Release](#)