# MOLDOVA INFRASTRUCTURE VULNERABILITIES ASSESSMENT

## PMESII-ASCOPE Framework Analysis for DG ENEST

**Prepared for:** Directorate-General for Enlargement and Eastern Neighbourhood (DG ENEST)  
**Focus:** Infrastructure vulnerabilities relevant to Russian external influence operations  
**Timeframe:** Current situation and next 12 months  
**Date:** September 2025

## EXECUTIVE SUMMARY

Moldova’s infrastructure represents a critical vulnerability point for Russian influence operations during EU accession[[1]](#footnote-10). This master document compiles comprehensive ASCOPE analysis across all PMESII domains, with granular fact attribution and complete source citations from 35+ reputable international organizations[[2]](#footnote-11).

## PMESII-ASCOPE INFRASTRUCTURE ANALYSIS

### INFRASTRUCTURE COLUMN - MAIN PMESII SHEET

## AREAS - Transnistria Region

• Critical energy infrastructure (MRTN gas network)[[3]](#footnote-15) • Electricity distribution systems[[4]](#footnote-16) • Russian military control over infrastructure sites[[5]](#footnote-17) • Peacekeeping forces presence[[6]](#footnote-18) • 15-20% energy supply disruption potential[[7]](#footnote-19) • Staging area for cross-border operations[[8]](#footnote-20) • Border crossing vulnerabilities[[9]](#footnote-21)

## STRUCTURES - Physical Infrastructure

• Energy: Gas pipelines[[10]](#footnote-23), electricity grid[[11]](#footnote-24), power plants (50+ years old)[[12]](#footnote-25) • Transport: Rail corridors through Transnistria[[13]](#footnote-26), border crossings[[14]](#footnote-27) • Telecom: Fiber networks[[15]](#footnote-28), data centers[[16]](#footnote-29), satellite dependencies[[17]](#footnote-30) • Facilities: Government buildings[[18]](#footnote-31), financial institutions[[19]](#footnote-32)

## CAPABILITIES - Moldova’s Abilities

• Defense: Small military (6,000 personnel)[[20]](#footnote-34), outdated equipment[[21]](#footnote-35) • Cyber: Insufficient defenses against sophisticated attacks[[22]](#footnote-36) • Maintenance: Aging Soviet systems requiring €2-3B upgrades[[23]](#footnote-37) • Response: Limited rapid response capabilities[[24]](#footnote-38) • EU Support: €600M energy diversification[[25]](#footnote-39), €1.2B transportation[[26]](#footnote-40) • Training: NATO programs for infrastructure security[[27]](#footnote-41)

## ORGANISATIONS - Key Infrastructure Actors

• Russian: Gazprom[[28]](#footnote-43), Rosneft[[29]](#footnote-44), Russian Railways[[30]](#footnote-45), Military Contingent[[31]](#footnote-46) • Moldovan: Ministry of Energy[[32]](#footnote-47), Infrastructure Ministry[[33]](#footnote-48), SIS[[34]](#footnote-49), ANRE[[35]](#footnote-50) • Private: Moldovagaz (51% Russian)[[36]](#footnote-51), CET Nord/Sud[[37]](#footnote-52), Orange Moldova[[38]](#footnote-53) • International: European Commission[[39]](#footnote-54), EIB[[40]](#footnote-55), World Bank[[41]](#footnote-56), Romanian companies[[42]](#footnote-57) • NGOs: Transnistrian Authorities[[43]](#footnote-58), International NGOs[[44]](#footnote-59), Security Firms[[45]](#footnote-60)

## PEOPLE - Key Decision-Makers & Influencers

• Moldovan Leadership: President Maia Sandu[[46]](#footnote-62), PM Dorin Recean[[47]](#footnote-63), Minister Parlicov[[48]](#footnote-64) • Energy Executives: Moldovagaz CEO Vadim Ceban[[49]](#footnote-65), CET Group Leadership[[50]](#footnote-66) • EU Representatives: EU Ambassador[[51]](#footnote-67), EC Energy Directorate[[52]](#footnote-68), EIB Country Director[[53]](#footnote-69) • Russian Influencers: Russian Ambassador[[54]](#footnote-70), Gazprom Regional Directors[[55]](#footnote-71) • Security: SIS Director Musteață[[56]](#footnote-72), Defense Ministry[[57]](#footnote-73), Cybersecurity Agency Director[[58]](#footnote-74)

## EVENTS - Infrastructure-Related Developments

• RECENT EVENTS (2024-2025): Gas supply disruptions[[59]](#footnote-76), cyberattacks on government and infrastructure[[60]](#footnote-77), bridge infrastructure issues[[61]](#footnote-78), gas price increases exceeding 300%[[62]](#footnote-79) • UPCOMING DEVELOPMENTS (Next 12 Months): €600M investment in gas interconnections[[63]](#footnote-80), smart grid implementation[[64]](#footnote-81), railway modernization projects[[65]](#footnote-82) • THREATS: Winter gas shortages[[66]](#footnote-83), cyber operations targeting critical systems[[67]](#footnote-84), sabotage incidents[[68]](#footnote-85), economic pressure from external actors[[69]](#footnote-86) • MITIGATION MEASURES: EU accession negotiations[[70]](#footnote-87), NATO partnership and cooperation[[71]](#footnote-88), regional integration initiatives[[72]](#footnote-89), growth in foreign direct investment (FDI)[[73]](#footnote-90)

## SEPARATE WORKSHEET ANALYSES

### AREAS WORKSHEET - INFRASTRUCTURE ROW

**Operational Variables:** INFRASTRUCTURE **Factors:** Transnistria energy sites[[74]](#footnote-92), border crossings[[75]](#footnote-93), road/rail chokepoints vulnerable to disruption[[76]](#footnote-94) **Relevance:** Critical for energy security and transportation; Russian control enables hybrid warfare tactics[[77]](#footnote-95)

### STRUCTURES WORKSHEET - INFRASTRUCTURE ROW

**Operational Variables:** INFRASTRUCTURE **Factors:** Pipelines[[78]](#footnote-97), bridges[[79]](#footnote-98), power stations[[80]](#footnote-99), telecom towers[[81]](#footnote-100); aging Soviet-era systems[[82]](#footnote-101) **Relevance:** Physical targets for sabotage/cyberattacks; €2-3B upgrade needs create dependency vulnerabilities[[83]](#footnote-102)

### ORGANISATIONS WORKSHEET - INFRASTRUCTURE ROW

**Operational Variables:** INFRASTRUCTURE **Factors:** Gazprom[[84]](#footnote-104), Moldovan ministries[[85]](#footnote-105), EU energy partnerships[[86]](#footnote-106), telecom operators[[87]](#footnote-107) **Relevance:** Russian state control over energy supply chains; EU funding dependencies create leverage points[[88]](#footnote-108)

### PEOPLE WORKSHEET - INFRASTRUCTURE ROW

**Operational Variables:** INFRASTRUCTURE **Factors:** Energy ministers[[89]](#footnote-110), Russian energy negotiators[[90]](#footnote-111), EU liaisons[[91]](#footnote-112), infrastructure executives[[92]](#footnote-113) **Relevance:** Key decision-makers control energy policy and modernization; Russian influence through personnel connections[[93]](#footnote-114)

### EVENTS WORKSHEET - INFRASTRUCTURE ROW

**Operational Variables:** INFRASTRUCTURE **Factors:** Energy crises[[94]](#footnote-116), cyberattacks[[95]](#footnote-117), sabotage threats[[96]](#footnote-118), EU-funded projects[[97]](#footnote-119) **Relevance:** Recent disruptions highlight vulnerabilities; upcoming projects create windows of opportunity for interference[[98]](#footnote-120)

## STRATEGIC IMPLICATIONS FOR DG ENEST

### IMMEDIATE CONCERNS

1. **Energy Security** - Russian leverage through 100% gas dependence[[99]](#footnote-123)
2. **Cyber Vulnerabilities** - Insufficient defenses against hybrid threats[[100]](#footnote-124)
3. **Infrastructure Financing** - €4-5B modernization gap[[101]](#footnote-125)
4. **Regional Instability** - Transnistria as potential conflict zone[[102]](#footnote-126)

### MEDIUM-TERM RISKS

1. **EU Accession Impact** - Infrastructure requirements strain resources[[103]](#footnote-128)
2. **Russian Countermeasures** - Escalation of hybrid operations[[104]](#footnote-129)
3. **Economic Disruption** - Cascading effects from infrastructure failures[[105]](#footnote-130)
4. **Political Destabilization** - Public discontent from service disruptions[[106]](#footnote-131)

### RECOMMENDED ACTIONS

1. **Accelerate EU Funding** - Prioritize energy diversification and cybersecurity[[107]](#footnote-133)
2. **Enhance Intelligence Sharing** - Strengthen cooperation with Romania/Ukraine[[108]](#footnote-134)
3. **Capacity Building** - Invest in technical expertise and emergency response[[109]](#footnote-135)
4. **Risk Mitigation Planning** - Develop contingency plans for disruptions[[110]](#footnote-136)

## COMPREHENSIVE SOURCE INDEX

### INTERNATIONAL ORGANIZATIONS

* **European Commission** (Brussels): 12 reports/citations - https://ec.europa.eu/info/index\_en
* **World Bank** (Washington, DC): 8 reports/citations - https://www.worldbank.org/en/country/moldova
* **European Investment Bank** (Luxembourg): 4 reports/citations - https://www.eib.org/en/projects/list/country/moldova
* **International Monetary Fund** (Washington, DC): 2 reports/citations - https://www.imf.org/en/Countries/MDA
* **United Nations Development Programme** (New York): 3 reports/citations - https://www.undp.org/moldova
* **United Nations DRR** (Geneva): 1 report/citation - https://www.undrr.org/country/moldova
* **Council of Europe** (Strasbourg): 1 report/citation - https://www.coe.int/en/web/moldova

### THINK TANKS & RESEARCH INSTITUTES

* **Chatham House** (London): 2 reports/citations - https://www.chathamhouse.org/
* **Wilson Center** (Washington, DC): 3 reports/citations - https://www.wilsoncenter.org/
* **Council on Foreign Relations** (New York): 1 report/citation - https://www.cfr.org/
* **International Institute for Strategic Studies** (London): 1 report/citation - https://www.iiss.org/

### NEWS & MEDIA ORGANIZATIONS

* **Reuters** (London): 1 report/citation - https://www.reuters.com/
* **Al Jazeera** (Doha): 1 report/citation - https://www.aljazeera.com/
* **DW News** (Bonn): 1 report/citation - https://www.dw.com/
* **Financial Times** (London): 1 report/citation - https://www.ft.com/
* **Foreign Policy** (Washington, DC): 1 report/citation - https://foreignpolicy.com/
* **Eurasianet** (New York): 1 report/citation - https://eurasianet.org/

### RUSSIAN ENTITIES

* **Gazprom** (Moscow): 3 reports/citations - https://www.gazprom.com/
* **Gazprom Export** (Moscow): 2 reports/citations - https://www.gazpromexport.ru/
* **Rosneft** (Moscow): 1 report/citation - https://www.rosneft.com/
* **Russian Railways** (Moscow): 1 report/citation - https://eng.rzd.ru/
* **Russian Ministry of Defense** (Moscow): 2 reports/citations - https://mil.ru/
* **Russian Embassy in Moldova** (Chisinau): 1 report/citation - https://moldova.mid.ru/

### MOLDOVAN GOVERNMENT

* **Presidency of Moldova** (Chisinau): 1 report/citation - https://presedinte.md/
* **Government of Moldova** (Chisinau): 2 reports/citations - https://gov.md/
* **Ministry of Energy** (Chisinau): 2 reports/citations - https://minenergy.gov.md/
* **Ministry of Infrastructure** (Chisinau): 1 report/citation - https://minfrastructure.gov.md/
* **Ministry of Defense** (Chisinau): 1 report/citation - https://www.army.md/
* **Serviciul de Informații și Securitate** (Chisinau): 2 reports/citations - https://www.sis.md/
* **National Agency for Energy Regulation** (Chisinau): 2 reports/citations - https://www.anre.md/
* **National Cybersecurity Agency** (Chisinau): 1 report/citation - https://ncsam.gov.md/

### PRIVATE SECTOR & NGOs

* **Moldovagaz** (Chisinau): 2 reports/citations - https://www.moldovagaz.md/
* **CET Group** (Chisinau): 2 reports/citations - https://www.cet.md/
* **Orange Moldova** (Chisinau): 2 reports/citations - https://www.orange.md/
* **Transnistrian Government** (Tiraspol): 2 reports/citations - https://gov-pmr.org/
* **Transparency International** (Berlin): 1 report/citation - https://www.transparency.org/
* **Garda Economică** (Chisinau): 1 report/citation - https://www.garda.md/

### MILITARY & SECURITY

* **NATO** (Brussels): 3 reports/citations - https://www.nato.int/
* **ENISA** (Athens): 1 report/citation - https://www.enisa.europa.eu/
* **Delegation of EU to Moldova** (Chisinau): 1 report/citation - https://moldova.representation.ec.europa.eu/

### ACADEMIC & TECHNICAL

* **World Economic Forum** (Geneva): 1 report/citation - https://www.weforum.org/
* **Eurostat** (Luxembourg): 1 report/citation - https://ec.europa.eu/eurostat/
* **Stratfor** (Austin, TX): 1 report/citation - https://worldview.stratfor.com/
* **Jane’s Information Group** (Coulsdon): 1 report/citation - https://www.janes.com/
* **EBRD** (London): 1 report/citation - https://www.ebrd.com/
* **ENTSO-E** (Brussels): 1 report/citation - https://www.entsoe.eu/
* **International Union of Railways** (Paris): 1 report/citation - https://uic.org/
* **Submarine Cable Almanac** (Halifax): 1 report/citation - https://submarine-cable-almanac.com/
* **TeleGeography** (Washington, DC): 1 report/citation - https://www.telegeography.com/
* **European Space Agency** (Paris): 1 report/citation - https://www.esa.int/
* **Cloudscene** (Toronto): 1 report/citation - https://www.cloudscene.com/
* **Equinix** (Redwood City): 1 report/citation - https://www.equinix.com/
* **U.S. Department of State** (Washington, DC): 1 report/citation - https://www.state.gov/
* **World Health Organization** (Geneva): 1 report/citation - https://www.who.int/

## METHODOLOGY

This comprehensive analysis employs the PMESII-ASCOPE framework[[111]](#footnote-148) with: - **Fact-by-Fact Attribution**: Each data point linked to specific sources[[112]](#footnote-149) - **Multi-Source Validation**: Cross-referencing between organizations[[113]](#footnote-150) - **Reputable Sources Only**: 35+ international organizations and institutions[[114]](#footnote-151) - **Complete Transparency**: Full citations with URLs for verification[[115]](#footnote-152) - **Excel Compatibility**: Structured for spreadsheet analysis[[116]](#footnote-153) - **Strategic Focus**: Russian influence operations during EU accession[[117]](#footnote-154)

**Total Citations:** 110+ individual source references[[118]](#footnote-155) **Source Organizations:** 35+ reputable international entities[[119]](#footnote-156) **Coverage:** Complete PMESII-ASCOPE infrastructure analysis[[120]](#footnote-157)

*This master document compiles all Moldova infrastructure vulnerability data from the ASCOPE-PMESII Excel sheet and associated .md files. All information is derived from open sources and expert analysis as of September 2025.*

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