

Contents

Abbreviations	5
Executive Summary	7
Key Findings and Recommendations	11
1. Evaluation Context.....	15
1.1. Object of the evaluation: overview of LIOP Energy	15
1.2. Context: background to the LIOP energy interventions	18
1.4. LIOP Theory of Change.....	23
2. Evaluation Design and Methodology	26
2.1. Objectives of the Evaluation	26
2.2. Overall Evaluation Framework	27
2.3. Methodology	28
3. Analysis and Interpretation.....	32
3.1. Effectiveness	32
3.2. Coherence	43
3.3. Efficiency	46
3.4. Impact	50
3.5. Sustainability.....	59
4. Lessons learned from Poland and Lithuania OPs	65
5. Conclusions and recommendations	75
5.1 Effectiveness	75
5.2 Coherence	76
5.3 Efficiency.....	77
5.4 Impact	78
5.5. Sustainability.....	80
Annex A. LIOP Theory of Change	84
Annex B. Evaluation matrix (inception report)	85
Annex C. Data collection tools and project selection	90
Annex D. Case studies.....	95
Annex E. Desk review documents.....	140
Annex F. List of members of CCE LIOP.....	142

Tables

Table 1.2. LIOP implementation status as of January 31, 2021	15
Table 1.3. Energy-related LIOP projects	17
Table 1.4. Comparison between OP 2007-13 and OP 2014-20	22
Table 1.5. The LIOP Theory of Change	23
Table 2.1. List of Case Studies	30
Table 2.2. Methodological Limitations.....	31
Table 3.1. Summary of Progress in Achieving Program Outputs and Outcomes.....	32
Table 3.2. Ex ante CBA results.....	49
Table 3.3. Progress in Meeting the Program SO in Targeted Sectors, Territories, and Groups	50
Table 3.4. Pilot projects for smart metering.....	56
Table 3.5. Estimated Spillover Effects.....	58
Table 4.1. Overview of OPs in Romania, Lithuania, and Poland	65

Abbreviations

ANRE	National Energy Regulator
bcm	billion cubic meters
CBA	cost-benefit analysis
CHP	combined heat and power
DH	district heating
DSO	distribution system operator
ESIF	European Structural and Investment Funds
ERDF	European Regional Development Fund
EC	European Commission
EE	energy efficiency
EQ	evaluation question
ESCO	energy service company
EU	European Union
GHG	greenhouse gas
IHP	independent heat producer
INS	National Institute of Statistics
kgoe	kilograms of oil equivalent
LIOP	Large Infrastructure Operational Program
LNG	liquefied natural gas
MA	Managing Authority
MDPWA	Ministry of Development, Public Works and Administration
MEWF	Ministry of Environment, Waters and Forests
MIEP	Ministry of Investments and European Projects
MoE	Ministry of Energy
MW	megawatt
MWe	megawatt electric
MWh	megawatt-hour
MWt	megawatt thermal
mtoe	million tonnes of oil equivalent
NECP	National Energy and Climate Plan
NRRP	National Recovery and Resilience Plan
NTS	National Transmission System
ohl	overhead line
OP	Operational Program
PA	Priority Axis
PCI	Project of Common Interest (EU)
PEST	Political, Economic, Sociological, Technological
PM ₁₀	particulate matter less than 10 micrometers in diameter
PV	photovoltaic

RES	renewable energy sources
ROP	Regional Operational Program
RID	Regional Infrastructure Directorate
SAIDI	System Average Interruption Duration Index
SMART	specific, measurable, achievable, relevant, and timebound
SO	Specific Objective
SOE	state-owned enterprises
SOP	Sectoral Operational Program
SWOT	strengths, weaknesses, opportunities, and threats
TBP	Trans-Balkan Pipeline
tCO ₂ e	tonnes CO ₂ equivalent
ToC	theory of change
TSO	transmission system operator