

CURRICULUM VITAE

Contact details:

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- 1 **Family name:** BICOVA
- 2 **First names:** ELENA
- 3 **Date of birth:** 08/1962
- 4 **Nationality:** Moldova
- 5 **Education:**

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| Institution | Faculty of Power Engineering of the Moscow Power Engineering Institute (Russia Federation). Specialty: Power Systems and networks, graduate as an Electrical Engineer |
| Date: from (month/year): to (month/year): | 09/1979 03/1985 |
| Degree(s) or Diploma(s) obtained: | Dipl. Electrical Engineer |

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| Institution | Faculty of Mathematics of the Tiraspol Pedagogic Institute. Specialty: Lecturer of Mathematics |
| Date: from (month/year): to (month/year): | 09/1991 06/1995 |
| Degree(s) or Diploma(s) obtained: | Dipl. Assistant of mathematics |

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| Institution | Post graduate student, Institute of Power Engineering of Academy of Science of the Republic of Moldova |
| Date: from (month/year): to (month/year): | 09/1998 06/2002 |
| Degree(s) or Diploma(s) obtained: | 2003:Academic degree: Ph.D. in Power Engineering |

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| Institution | Institute of Power Engineering of Academy of Science of the Republic of Moldova |
| Date: from (month/year): to (month/year): | 2015 |
| Degree(s) or Diploma(s) obtained: | Dipl. Conferential Researcher |

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| Institution | TA-ESS UNECE |
| Date: from (month/year): to (month/year): | 16/2014 01/2015 |
| Degree(s) or Diploma(s) obtained: | Training courses in elaboration of energy balances. Authorisation license. |

6 Language skills: (Mark 1 to 5 for competence, 5 being the highest)

| Language | Reading | Speaking | Writing |
|------------------------|---------|----------|---------|
| Romanian | 4 | 4 | 4 |
| English | 4 | 4 | 4 |
| Russian(mother tongue) | 5 | 5 | 5 |

7 Membership of professional bodies:

1. Member of Profile Seminar of The Institute of Power Engineering of Academy of Science of the Republic of Moldova
2. Member of Profile Seminar of Power Engineering in The State University of Agriculture of the Republic of Moldova

8 Other skills (e.g. Computer literacy, etc.):

Computer literate. Computer tools: Windows 7, Word 2010, Excel 2010 and others, Internet Explorer, E-mail, Mathcad, LEAP, COPERT, special energetic programs, etc.

9 Present position: Researcher coordinator associate of The Institute of Power Engineering

10 Key qualifications (relevant to the activity):

Ms Elena Bicova took part in theoretical research in energy supply, electric power systems and high-voltage power lines , Energy economics studies, investment planning, energy sector modeling, Management and control operations in electrical power systems, Investigation and analysis of energy efficiency and energy security problems, Computer and mathematical modeling of electric power lines, Balances of electricity:

- Construction of transmission lines of new type –controlled transmission lines
- Development of new designs of the phase controlled transmission lines
- Calculation of normal modes of the energy system and the analysis of its parameters, voltage at the nodes, power flows on transmission lines, power losses and electricity losses, etc.
- Simulation of electrical networks 10, 35, 110, 330 kV
- Analysis of accounting and control flows in the energy balance system
- Analysis of risks and threats to energy security, development of indicators of the energy security, development of methods for integrated assessment of the level of energy security, scenario analysis of threats and measures to prevent them.

- Calculation of greenhouse gases (CO₂, CH₄, N₂O, NO_x, SO₂, NMVOC, CO) from the energy sources of different types of stations: condensation, cogeneration type, heat plants, industrial boilers, boiler in the residential, commercial, agricultural sector, the calculation of fugitive emissions from the transportation of gas and oil products

- Calculation of pollutants from energy sector (heavy metals and others –total-25) from the energy sources of different types of stations: condensation, cogeneration type, heat plants, industrial boilers, boiler in the residential, commercial, agricultural sector;

- Calculations the prognoses of consumption fuels- energy balances for short-time period;

- Elaboration of energy sector database for calculation indicators of energy security and additional directions - economy and ecology databases; soft for analyses and monitoring the level of energy security.

- Elaboration of forecasts of energy balances;

Dr. Bicova Elena este angajată la Institutul de Energetică al AȘM din anul 1989. A activat în funcția de inginer, cercetător științific (2000-2003), cercetător științific superior (2003-2007), cercetător științific coordonator (2007 - prezent) Toate funcțiile de cercetător au fost ocupate prin concurs. Teza de dr. în tehnica a fost pregătită și susținută (a. 2003) la IE AȘM la specialitatea 05.14.02.

Domenii de interes: securitatea energetică - metode de calcul, baze de date, modelare matematică și prognoza evoluției indicatorilor ce caracterizează nivelul securității energetice; modelarea regimurilor de funcționare a sistemului electroenergetic național; prognoza dezvoltării surselor de generare, inclusiv de generare distribuită.

Este autor a 9 monografii în domeniul dezvoltării sectorului energetic și securității energetice, inclusiv 2 monografii de un singur autor. Articole publicate în reviste recenzate – peste 60, rapoarte la conferințe internaționale – 20.

Responsabil de executare a lucrărilor de cercetare din cadrul proiectelor instituționale în perioada 2001-2012, conducător științific al proiectului bilateral de colaborare Moldova-Belarusia de cercetare 08.820.16BF „Bazele științifice pentru implementarea și monitorizarea securității energetice al Moldovei și Belarus și elaborarea recomandărilor practice pentru implementare (2008- 2009)

Participarea în 10 proiecte internaționale în calitate de executant responsabil finanțate de UNDP, UNOPS, UNFCCC.

Dr. Bicova Elena has been engaged in the ASM Energy Institute in 1989 and worked as an engineer, scientific researcher (2000-2003), Senior Researcher (2003-2007), Scientific researcher (2007 - Introduce). The researchers were occupied by contest PhD thesis which has been prepared and supported (a. 2003) IE ASM specialty 05.14.02 in area Energy Security.

Research interests: Energy Security – methods, databases, mathematical modeling and forecast of the indicators; shaping the operating modes of the national power system; developing of traditional and renewable energy sector, including distributed generation.

Dr. Bicova Elena is the author of nine monographs in energy sector development and energy security, including 2 monographs by a single author. Articles published in peer reviewed journals - more than 150 reports at international conferences - 30.

Dr. Bicova Elena was Responsible executor of institutional research projects during 2001-2016 (IE ASM) , Scientific leader of the project Moldova-Belarus bilateral collaborative research 08.820.16BF FCFC "Scientific bases for implementing and monitoring the energy security of Moldova and Belarus and development of practical recommendations for implementation" (2008- 2009).

Participation in more than 10 international projects as responsible executant financed by the UNDP, UNOPS, UNFCCC.

11 Specific experience in Energy Sector:

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| 01-02 2016 | Experience in the assessment of pollutants on based EMEP-2013 in Energy sector (Energy industry, Industry and Construction, Residential and commercial, agricultural sectors, Transport sector) |
| 10-12 2015 | Forecasts of energy balances development to 2015-2016 years; |
| 09-12 2014 | Project “Programul de fortificare a capacităților în domeniul dezvoltării cu emisii reduse de carbon în Republica Moldova” |
| 06- 11 2014 | Training course during 5 days “ Training on Energy Statistics and Energy Planning” with certification |
| January – September 2014 | Experience in the assessment of pollutants on based EMEP-2009, EMEP-2013 in Energy sector (Energy industry, Industry and Construction, Residential and commercial, agricultural sectors, Transport sector). |
| March – August 2012, May – August 2013, January – March 2014 | Experience in the assessment of pollutants on based EMEP-2009, EMEP-2013 in Transport sector, using special program “COPERT4” for transport sector. |
| January – March 2013 | UNECE project „Enhancing Synergies in CIS National Programs on Energy Efficiency and Energy Saving for Greater Energy Security. Developer of the National Report. |
| March – December 2013 | National GHG Inventory Expert (Energy Sector). PROJECT: ENABLING ACTIVITIES FOR THE PREPARATION OF TNC UNDER THE UNFCCC, INCLUDING TRANSPORT SECTOR. |
| January – July 2008 | National GHG Inventory Expert (Energy Sector). UNEP-GEF Project „Republic of Moldova: Enabling Activities for the preparation of the SNC under the UNFCCC”, INCLUDING TRANSPORT SECTOR. |
| January – December 2007 | National GHG Inventory Expert (Energy Sector). UNEP-GEF Project „Republic of Moldova: Enabling Activities for the preparation of the SNC under the UNFCCC”, INCLUDING TRANSPORT SECTOR. |
| January – December 2006 | National GHG Inventory Expert (Energy Sector). UNEP-GEF Project „Republic of Moldova: Enabling Activities for the preparation of the SNC under the UNFCCC”, INCLUDING TRANSPORT SECTOR. |
| July 2004 – December 2005 | National GHG Inventory Expert (Energy Sector, including transport sector). UNDP-GEF Regional Project RER/01/G31 “Capacity Building for Improving the Quality of Greenhouse Gas Inventories (Europe and the Commonwealth of Independent States Region). |
| July – October, 1999 | Local Expert in Energy Sector - Abatement of the GHG Emissions from Energy Sector, UNDP/GEF Project «Enabling Moldova to Prepare its First National Communication in Response to the UNFCCC», UNDP Moldova. |
| June – July, 1999 | Local Expert in GHG Emission assessment from Moldavian Sugar Beet Factories, UNDP/GEF Project «Enabling Moldova to Prepare its First National Communication in Response to the UNFCCC», UNDP Moldova. |
| February – May, 1999 | Local Expert in assessment of GHG emissions from Energy Sector, UNDP/GEF Project «Enabling Moldova to Prepare its First National Communication in Response to the UNFCCC», UNDP Moldova. |

12 Professional Experience Record:

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| Date: from (month / year) to (month / year) | 04/1985-06/1990 |
| Location: | Moldova |
| Company: | MOLDENERGO, Moldova |
| Position: | Engineer of the Department of Power Networks for Agriculture |
| Description: | <i>Management and control operations in electrical power systems</i> Implementation of the Engineer in accordance with the staffing, and namely: 1) analysis of the electrical networks of 10 kV and above - the timing of the disabled condition of the equipment and the monthly average for the year; 2) The balance of power and the parameters of the normal modes of the current-account information, conduct transactions; 3) analysis of future needs in the construction of new transmission lines with increasing loads, but the choice of connection nodes of new lines, the choice of circuits, equipment, selection substation functions for new lines for the expansion of power supply options, the calculations of normal modes of energy systems. |

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| Date: from (month / year) to (month / year) | 01/2005 to up today |
| Location: | Moldova |
| Company: | The Institute Power Engineering |
| Position: | Scientific Researcher Associate coordinator |
| Description: | <i>Theoretical research in energy supply, electric power systems and high-voltage power lines</i> <i>Energy economics studies, investment planning, energy sector modeling</i> <i>Management and control operations in electrical power systems</i> <i>Investigation and analysis of energy efficiency and energy security problems</i> <i>Computer and mathematical modeling of electric power lines.</i> |

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| Date: from (month / year) to (month / year) | 07/1990 to 01/2005 |
| Location: | Moldova |
| Company: | The Institute Power Engineering |
| Position: | Scientific researcher |

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| Description: | <p>In field of energy security and controlled transmission lines.</p> <p>Description:</p> <ol style="list-style-type: none"> 1) analysis of the sector of electricity and thermal energy, analysis of the balances of electricity and heat, analysis of the fuel sector in the country; 2) development of indicators describe the sectors of electricity, heat energy and fuel sector; 3) The definition of the indicator values during 1990-2015 and the definition of the most crisis indicators; research complex of methods for quantitative assessment of energy security; 4) determination of a priority list of necessary actions for the normalization situation, namely: <ol style="list-style-type: none"> a) A list of new transmission lines to be built, schemes for connection with power system, the necessary equipment to connect to; b) a list of measures to improve the sector of heat supply, including small steam and gas installations for lack of satisfaction, not only in the heat, but also in electrical energy, its placement scheme to the substations and power system, c) analysis capabilities of electricity network to satisfaction loads. |
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13 Others:

Elena Bicova is a member of working group in Ministry of economy and take part in elaboration prognoses of energy balances on short-time period for energy sector of Republic Moldova.

Elena Bicova is a member of working group in Ministry of ecology and take part in evaluation emission pollutants from energy sector of Republic Moldova.

Energy Projects: carried out several energy projects, which are

| <i>Client</i> | <i>Date</i> | <i>Name and brief description of the project</i> |
|----------------|-------------|--|
| 11.817.06.01F. | 2015-2108 | Elaborarea mecanismelor de sporire a securității energetice a țării bazate pe promo-varea tehnologiilor energetice adaptive |
| CSSDT | 2011-2014 | Modele, metode de calcul și analiză întru promovarea dezvoltării durabile a complexului energetic și sporirii securității energetice |

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| Air Quality Governance in ENPI East Countries Europe | 2013-2014 | Experience in preparation "Air Quality Governance in ENPI East Countries Europe" Aid/129522/C/SER/Multi MWH Emission Inventory. Assessment of pollutants on based EMEP-2009, EMEP-2013 in Energy sector, Transport sector, using special soft "COPERT4" for transport sector |
| IPCC | 1989 - 2015 | Experience in preparation of GHG Inventory for Energy sector (First, Second, Third Communication); Application of Good Practice Guidance in GHG Inventory preparation; Experience in application of quality assurance and quality control for the GHG Inventories in Energy sector. |
| UNECE | 2013 | UNECE project „Enhancing Synergies in CIS National Programs on Energy Efficiency and Energy Saving for Greater Energy Security. Developer of the National Report. |
| FCFC | 2008-2009 | Manager, International (Republic of Moldova-Belarus) Project "Scientific basis of analysis and monitoring the Energy Security of the Republic of Moldova and Belarus", 08.820.16BF. |
| Moldenergo | 2000 | Regional Expert in Energy Management, World Bank Project Energy II "Feasibility Study for Rehabilitation of System Metering, Dispatch, Communications and Transmission". |

14 Publications: (total- more 150, include 2 monographs in area energy security, and chapters in 7 monographs)

2015

Estimări privind impactul unor măsuri de economisire a combustibilului asupra securității energetice a Republicii Moldova. E. Bîcova, V. Berzan, M. Grodețchi. 12 страници, 31 тыс. слов (до сокращения), 0,75 п.л.

Журнал «Академос», №1, 2015, с.92-101. ISSN 1857-0461

<http://www.akademos.asm.md/files/Tendintele%20functionarii%20sistemului%20energetic.pdf>

Быкова Е.В., Берзан В.П., Гродецкий М.В. Анализ структуры ТЭБ и подходы к построению краткосрочных прогнозов по потреблению топлива. Сборник трудов 8 международной конференции «Энергетика: управление, качество и эффективность использования энергоресурсов», Благовещенск, 27-29 мая 2015 г., с. 326-329. ISBN 978-5-93493-240-5

2014

Е.В. Быкова, М.Х. Царану, Т.И. Кириллова. Анализ эмиссий в атмосферу при сжигании топлива в секторе сельскохозяйственного производства Молдовы. Журнал «Экология плюс», Полтава,

Украина.2014,1(40),2-8.

2013

National Inventory Report, Greenhouse Gas Sources and Sinks in the Republic of Moldova, 1990-2010, Chisinau, 2013. Ch.: „IMPRINT PLUS” SRL, 2013- 379 p. CZU 551.583 (049.1) (478), ISBN 9975-940-44-7. Chapter 3. Elena Bicova, Vitalii Postolatii, Marius Taranu.

National Report „Enhancing Synergies in CIS National Programmes on Energy Efficiency and Energy Saving for Greater Energy Security. www.unece.org.

Third National Communication of the Republic of Moldova under the United Nations Framework.

Convention on Climate Change / United Nations Environment Team: Vasile Scorpan, Marius Taranu and others. Chapter 3- Institute of Energy of the ASM Vitalii Postolatii, Elena Bîcova.– Ch.: “Imprint Plus ” SRL, 2013. – 415 p.ISBN 978-9975-4385-6-8 135 copies. <http://www.clima.md>

2012

Постолатий В.М., Быкова Е.В. Исследование системной эффективности расширения действующих теплоцентралей в энергосистеме Молдовы. *Problemele Energeticii Regionale*. 2012, 2(18)

Е.В.Быкова, Т.И.Кириллова. Актуальные вопросы экологической безопасности Молдовы. *Журнал «Экология плюс»*, Полтава, Украина.2012,2(27),17-26.

2011

БЫКОВА, Е. Анализ текущей ситуации по использованию ВИЭ В Молдове с учетом региональных аспектов. *Сборник трудов Международного семинара экспертов по возобновляемым источникам энергии. Минск 22-24 февраля 2011 г.* Минск: Беларус.наука. 2011, 33-50. ISBN 978-985-08-1315-2.

БЫКОВА, Е.; КИРИЛЛОВА, Т. Система мониторинга энергетической, экономической и экологической безопасности для Молдовы. *Сборник трудов VI-ой Международной научно-практической конференции «Наука и социальные проблемы общества: Информатизация и информационные технологии»*, 24-25 мая 2011 г. г. Харьков, Украина. 2011, 76-77.

БЫКОВА, Е.; ПОСТОЛАТИЙ, В.; ЧИНИК, М.; ГРОДЕЦКИЙ, М.; КИРИЛЛОВА Т. Мониторинг индикаторов энергетической безопасности и их корреляция с экономическим развитием страны. *Analele Institutului de Energetică al ASM. Fascicola 2*. Ch.: TAŞM, 2010. 131-156. ISSN

2009

Second National Communication of the Republic of Moldova under the United Nations Framework.

Convention on Climate Change / United Nations Environment Progr.; coord. Violeta Ivanov, George Manful. Synthesis Team: Vasile Scorpan, Marius Taranu, Petru Todos, Ilie Boian Institute of Energy of the ASM Vitalii Postolatii, Elena Bîcova şi alt.– Ch.: “Bons Offices” SRL, 2009. – 316 p.ISBN 978-9975-80-313-7 500 copies.

Bicova, E.V., Taranu, M.H., et al. (2009), Raport Național de Inventariere. Surse de emisii și sechestare a gazelor cu efect de seră în Republicii Moldova, 1990 - 2005. Chisinau, 2009, mold. și engl. UNEP/ GEF, Chisinau, 2009. Ch. Continental Grup SRL, ISBN 978-9975-9650-8-8351, 364 p [mold].

Second National Communication of the Republic of Moldova under the United Nations Framework.

Convention on Climate Change / United Nations Environment Progr.; coord. Violeta Ivanov, George Manful. Synthesis Team: Vasile Scorpan, Marius Taranu, Petru Todos, Ilie Boian

Vitalii Postolatii, Elena Bîcova (2009), Institute of Energy of the ASM (Energy Sector). Ch.: “Bons Offices” SRL, 2009. – 316 p. ISBN 978-9975-80-313-7. 500 copies. This document is available at: <http://www.clima.md>,http://www.clima.md/public/458/en/SNC_ENG_Web.pdf

2008

Bicova E.V. (2008), Methodology for the analysis of energy and ecological security. Journal "Naukovi pratsi", Nikolaev, Ukraine, № 64, 2008, p.84-88.

Bicova, E.V. (2008), ANALYSIS OF THE STRUCTURE FUEL SUPPLY AND CO2 EMISSIONS IN THE ENERGY SECTOR OF MOLDOVA FROM VIEW OF ENERGY SECURITY

«Problemele energeticii regionale», scientific, information-analytical magazine. <http://www.asm.md>, № 1, 2008, p. 59-63.

Bicova, E.V. (2008), The Monitoring indicators of energy security. Monograph., Tipogr. Acad. de St. a RM,

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| 162 p, 2008, Chisinau, Moldova ISBN 978-9975-62-246-2 |
| 2007 |
| Bicova, E.V., Taranu, M.H., Burtsev, S.V. (2007) , FUGITIVE EMISSIONS FROM THE ENERGY SECTOR OF THE REPUBLIC OF MOLDOVA. «Problemele energeticii regionale», scientific, information-analytical magazine. http://www.asm.md , № 2, 2007. |
| 2006 |
| Bicova, E.V., Taranu, M.H., Kirillova, T.I. (2006) , Approaches to formatting a system of ecological indicators as part of the system of indicators of energy security. «Problemele energeticii regionale», scientific, information-analytical magazine ", № 1, 2006. ISSN 1857-0070 http: / / www.asm.md , 9 pages. |
| Bicova, E.V. (2006) , The comparative analysis of ecological indicators from Moldova and other CIS countries «Problemele energeticii regionale», scientific, information-analytical magazine. № 1, 2006 ISSN 1857-0070 http: / / www.asm.md , 12 p. |
| 2005 |
| Bicova, E.V., Taranu, M.H., Scorpan, V.Gh. (2005) , <i>The Assessment of the CO₂ emissions from Energy Industry for the period of 1990-2002 in Moldova</i> . The International Conference "Moldova's Energetics – 2005", 21-24 September 2005, Chisinau: Reports. Ch.: Tipogr. Acad. de St. a RM, pp. 730-736. |
| Bicova, E.V. (2005) , The Methods of calculation and analysis of energy security (for example power complex of Moldova) Monograph, Chisinau, Moldova, Tipogr. Acad. de St. a RM, 158 p., 2005. ISBN 9975-62-129-5 |
| 2001 |
| V.M. Postolatii, Bicova E.V. (2001) , <i>The analysis of the impact of energy enterprises on environment</i> . In the monograph: Analysis of situation in energy complex of the Republic of Moldova and ways of ensuring energy security. Chisinau, "Stiinta". 2001, pages 77-88. |
| 2000 |
| Bicova E.V. (2000) , <i>Emissions of CH₄, N₂O, CO and NO_x from energy sector of the Republic of Moldova</i> . Articles collection. Climate change. Researches, studies, solutions. Chisinau. 2000, p.155-157. |
| Bicova E.V. (2000) , <i>CO₂ emissions from energy sector of the Republic of Moldova within 1990-1998 period</i> . Articles collection. Up to date technologies on the brink of XXI century. Chisinau 2000, p.78-81. |
| Bicova E.V. (2000) , <i>Analysis of CO₂ emissions from energy sector of the Republic of Moldova</i> . In: Energy Sector - management, quality and efficiency. Blagoveshcensk, Russia. 2000, p.391-394. |

Signature: Elena Bicova