United Nations ECE/ENERGY/2021/16

Economic and Social Council

Distr.: General
15 September 2021

English only

Economic Commission for Europe

Committee on Sustainable Energy

Thirtieth session
Geneva, 22-24 September 2021
Item 4 of the provisional agenda
Strategic review of the sustainable energy subprogramme

Thirtieth session of the Committee on Sustainable Energy – Looking back and peering forward

Note by the secretariat

Summary

The Committee on Sustainable Energy is invited to pause, look back to thirty years of activities, and remember what has contributed to what is today's Committee on Sustainable Energy and its far-reaching expert network.

This document provides a summary of memorable events, historic milestones, noteworthy activities, trends and achievements for information and institutional memory. It does not seek to be complete, rather it seeks to provide an interesting legacy about how collaborative spirit action can lead to meaningful, impactful results and contribute to peace and quality of life in a region. Starting in 1947, the document describes the main activities and achievements, and peeks into the crystal ball given existing mandates requested by member States. This document is presented to the Committee on Sustainable Energy for information.

I. Introduction

1. The work of the United Nations Economic Commission for Europe (ECE) on sustainable energy is designed to improve access to affordable, reliable, sustainable, and modern energy for all and help reduce greenhouse gas emissions and the carbon footprint of the energy sector in the region. It promotes international policy dialogue and cooperation among governments, energy industries and other stakeholders. The focus is on energy efficiency, cleaner electricity production from fossil fuels, renewable energy, coal mine methane, natural gas, classification of energy and mineral reserves and resources, and energy security. Under its current programme, ECE develops normative instruments, including work on standards and best practice guidance in energy efficiency, renewable energy, natural gas, and methane.

2. The Committee on Sustainable Energy (the Committee) is the intergovernmental body that oversees these activities and thus provides ECE member States with a platform for international dialogue and cooperation in the field of sustainable energy.

3. This document provides a summary of important events, historic milestones, noteworthy activities, trends and achievements for information and institutional memory. It is testimony to a legacy of collaborative spirit and action that can deliver meaningful, impactful results and contribute to peace and quality of life in a region. The document describes the main activities and achievements of ECE on energy starting from 1947 and looks forward based on mandates requested by member States.

4. This document invites readers to reflect on the many years of activities and the many people who contributed to today's Committee and its far-reaching expert network. A timeline of historic events is presented in Annex I. Additional information can be found in the documents "Draft programme of work of the sustainable subprogramme for 2022" (ECE/ENERGY/2021/1) and the "Revised strategic review of the United Nations Economic Commission for Europe sustainable energy subprogramme" (ECE/ENERGY/2021/4). A special mention goes to Dr. Klaus Brendow, former Director of the Energy Division, for his contribution to the institutional memory, also presented to the Committee in the informal document describing the ECE Energy Activities (ECE/ENERGY/2021/INF.4). His work and his historic comic collection are the bases for this document.

II. 1947 to 1991: Organizing energy cooperation in a sensitive environment - coal and electric power

A. A bit of history

5. ECE's energy work began in 1947 upon its creation with two committees: the Coal Committee from the Allied Emergency Economic Committee for Europe (EECE) and the Committee on Electric Power from the Allied European Coal Organisation (ECO). These Committees were to:

(a) address energy scarcity and war-damaged energy infrastructure in post-war Europe;

(b) comprise all countries, including defeated nations;

(c) absorb existing allied organisations on electric power and coal;

(d) adopt a structure and programme by fuel industries; and

(e) enhance intergovernmental cooperation by public-private partnership.

6. During its first three years, the Coal Committee distributed some 60 million tons of coal within Europe to support reconstruction after the war. At the same time the Committee on Electric Power studied possible technological developments with promising international prospects such as low-grade fuels, hydro recourses, and pumped storage. By applying normative instruments and conventions the Committee established international cooperation among the member states.

7. In 1956 an *ad hoc* Working Party on Gas was established. It became the Gas Committee in 1961 as the importance of gas grew in the European energy market. ECE did not receive a mandate to establish a body on oil despite the requests from three countries during the fifteenth session of ECE in 1960. Nor did it receive a mandate to cover nuclear power, as nuclear power was addressed by the International Atomic Energy Agency (IAEA), and later by groups of experts.

8. A timeline of the work done by these Committees (see Annexes I and III) can be summarized as follows:

(a) the post-war years, allocation of coal;

(b) the 1950s, reconstruction of infrastructure and easing of energy shortages;

(c) the 1960s, the "raid" of oil and gas, fuel substitution, technical and market studies, operations research, fuel statistics to become energy balances;

(d) the 1970s and 1980s, oil price shocks, revival of domestic energy resources, low-calorie solid fuels, multi-fuel policies, projections and modelling of scenarios, east-west energy trade, joint ventures, electric power interconnections, pollution control, efficiency, renewables, supply of heat and cooling to buildings; and

(e) the 1990s, transition from central planning to markets, assistance to economies in transition on institutional and structural change.

B. Main achievement: organising energy cooperation in a sensitive environment

9. The output per year of ECE's activities in energy during the early years consisted typically of about 20 studies, 10 workshops/seminars, 4 statistical bulletins, 2 publications in a newly created ECE Energy Series and 15-18 meetings serving over 1,200 delegates.

10. Noteworthy achievements during this period were:

(a) publication of the first version of the International Classification of Hard Coals by type in 1956, followed by publication of Mining and Upgrading of Brown Coal in Europe, Developments and Prospects in 1957 (later to become the ISO2950 standard). Other coal classifications published were: (i) International Codification System for Medium and High Rank Coals; (ii) International Classification of In-Seam Coals in 1988; (iii) Code of Uniform Standards and Procedures for the Performance of Draught Surveys of Coal Cargoes (ECE/ENERGY/19) in 1992; and (iv) Low Rank Coal Utilization – International Codification System in 2002;

(b) publication of a study on the Relationship between Coal and Black Oils in the West European Fuel Market in 1954, and The Price of Oil in Western Europe in 1955;

(c) the first special meeting on energy problems in Europe in March 1958 (E/3349 E/ECE/392);

(d) the first meeting of directors of National Mining Research Institutes in 1962 (to become a continuing body in 1969);

(e) the publication of a map of natural gas fields in Europe;

(f) the publication of Increased Energy Economy and Efficiency in the ECE Region (E/ECE/883.Rev.1) in 1976. This was the first publication, worldwide, to calculate energy efficiency, or inefficiency, of a regional energy system;

(g) the establishment of a new Principal Subsidiary Body called Senior Advisors to ECE Governments on Energy (Senior Advisors) with the mandate to exchange information and examine the situation between member States on

general energy problems. The first meeting took place on 29 October to 1 November 1979.

C. A turning point

11. In 1957, the ECE Energy Division was established to support the three sectoral Committees on coal, electric power, and gas. During the Cold War, the three Committees provided a neutral platform for energy industries to discuss current research and developments. In 1979, the three sectoral Committees on coal, electric power and gas were joined by the so-called ECE Governments on Energy after the first meeting of the Senior Advisors. For the central and eastern European countries and industries this constituted the only venue that facilitated technical and political cooperation with other countries. It appeared that they were more engaged with ECE and its Committees than countries of the west, which had other avenues for cooperation and collaboration.

12. A turning point came in 1987 with the publication of the Brundtland Report, Our Common Future, published by the World Commission on Environment and Development (WCED). The report defined the principle of sustainable development as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” It called for action towards sustainable development and encouraged countries to make national and international commitments towards environmental and climate protection.

13. The publication of the Brundtland Report was followed by the organization of the Bergen Conference, hosted by ECE and the Norwegian Government in 1990. 34 countries from the ECE region drafted and signed the Bergen Ministerial Declaration on Sustainable Development in the ECE Region to demonstrate their commitment to concrete measures to reduce greenhouse gas emissions and confront climate change. As a result of the Conference the Energy Efficiency 2000 Project (EE2000) was initiated and the Committee on Energy was formed.

14. The Committee on Energy was a merger of the three sectoral Committees on coal, electric power, and gas and the ECE Governments on Energy. In 1991, the work of the Committee was focused on improving energy efficiency and energy security in central and east European countries and the Commonwealth of Independent States (CIS). The Committee also helped the central and east European industry sector make the transition from a planned economy to a market economy. Discussions in the Committee became more technical and less politicized.

15. The first director of the Energy Division was Pierre Sevette (1957-1972). The first chair of the Committee on Energy was Jacques Lambotte from France. For a list of all chairs to date, please see Annex II.

III. 1991-1997: About technology, capabilities and moving forward

A. Background

16. The establishment of the Energy Committee and many of its major projects coincided with the shift of the United Nations towards sustainable development. In 1992, at the same time as the Energy Committee started its work on the United Nations Framework Classification (UNFC), the United Nations held the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit in Rio de Janeiro, Brazil, where the Agenda 21 was adopted. The Agenda 21 provided a new and unique framework for United Nations bodies putting sustainable development as a core mandate. In 1993, the General Assembly established the Commission on Sustainable Development (CSD) to monitor and promote the implementation of the UNCED outcomes, and the work of the Energy Committee began to focus on energy security issues in a wider

economic development context, away from studies and publications towards regional dialogue and interaction.

17. As a consequence, the output of the Energy Committee was based on dialogues held in the spirit of east-west cooperation. In this context, milestones consisted of organising conferences and consultations about market economy transitions, including about and in selected member States.

B. Main achievements: technology as a platform for dialogue beyond borders

18. Three noteworthy achievements during this period included:

(a) In 1991, the Energy Efficiency 2000 project was initiated to assist Central and Eastern Europe and CIS to enhance their energy efficiency and energy security. The project helped countries meet international environmental treaty obligations as well as become a catalyst for additional bilateral, multilateral, and private initiatives. The total budget of the EE2000 project was USD4.6 million from regular and extrabudgetary resources. When the project finished in 2000 its work was continued in the Energy Efficiency 21 Project (EE21). For more information on the project see Annex IV;

(b) In 1994, ECE launched a technical cooperation programme: Promotion and Development of a Market-Based Gas Industry in Economies in Transition – the Gas Centre, to assist gas companies in Central and Eastern Europe to create more decentralized and market-based gas industries. It provided a point of exchange of information, data, and experience between the gas industry, ECE and governments. The Gas Centre developed into a platform for engagement between governments and gas industry across the world. The programme was extrabudgetary and financed by gas companies, state-owned and private, from Europe, the CIS countries, and the Mediterranean Basin. Its membership was open to the gas companies of all regions and other stakeholders in the gas industry, representing all segments of the natural gas chain from source to use. The Centre was funded by 11 major gas companies with a total budget of USD500,000 in 1994 and USD461,000 in 2015. The Gas Centre ended in 2015. For more information on the project see Annex V;

(c) In 1992, work on the United Nations Framework Classification (UNFC) started to meet demand from member States for a standard reporting system for reserves and resources of solid fuels and mineral commodities. In 1997, the first version, United Nations International Framework Classification for Reserves/Resources – Solid Fuels and Mineral Commodities of 1997 (UNFC-1997), was presented, and it has been refined and adapted continuously over time with key milestones in 2004, when a revised version, UNFC for Fossil Energy and Mineral Resources 2004 (UNFC-2004), was published, and another in 2009 when it was renamed to UNFC for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009). Specifications (rules of application) for the Classification were prepared and published by the Expert Group on Resource Classification from 2010 onwards. In 2017, UNFC-2009 was renamed the United Nations Framework Classification for Resources (UNFC), and in 2019 a revised version of the Classification was published that includes requirements of different energy sectors. More details can be found in Annex VI. Work on development of the United Nations Resource Management System based on UNFC started in 2018 with the publication of the concept note “Transforming our world’s natural resources: A step change for the United Nations Framework Classification for Resources?” (ECE/ENERGY/GE.3/2018).

C. Another turning point

19. In 1997, the ECE celebrated its 50th anniversary. On the occasion, member States adopted a declaration on strengthening economic cooperation in Europe and a reform package regarding the strategic directions and priorities for its future activities. The reform had serious implications for the work in the field of energy in terms of priorities, intergovernmental bodies, and methods of work and led to the creation of the Committee on Sustainable Energy as we know it today.

20. The Committee on Energy undertook the following changes in response to the reform process from 1997:

(a) the Committee on Energy was renamed the Committee on Sustainable Energy and refocused its work on three subject areas, namely sustainable energy policies, energy efficiency and natural gas;

(b) the Energy Efficiency 2000 Project, the Steering Committee of the Energy Efficiency 2000 Project and its two subsidiary bodies, the Working Party on Gas, its three meetings of experts, and its Gas Centre were retained;

(c) the Working Party on Coal, the Working Party on Electric Power, and the five meetings of experts were discontinued; and

(d) the Ad Hoc Group of Experts on Thermal Power was established to continue the work in areas of thermal power and coal.

IV. 1997-2021: About nexus, interconnectedness and the 2030 Agenda on Sustainable Development

A. A bit of history

21. In 1998, a two-year international informational campaign started as preparation for the Millennium Summit of 2000. The campaign helped strengthen the commitment of the international community to the principles stated in the Millennium Report by the Secretary-General. At the conclusion of the Summit in 2000, 189 Member States signed the Millennium Declaration framing eight Millennium Development Goals (MDGs) to be met by 2015. The Committee on Sustainable Energy contributed to MDG7 – Environmental Sustainability, Target 9, by addressing issues of CO_2 emissions and consumption of solid fossil fuels. Work focused on three areas: energy efficiency, energy prices, and clean coal technology.

22. 2012 was declared the International Year of Sustainable Energy for All, and the United Nations Sustainable Energy for All (SE4ALL) project was initiated. Part of this initiative was a call for action on three objectives by 2030: (i) ensure universal access to modern energy services; (ii) double the rate of improvement of energy efficiency; and (iii) double the share of renewable energy in the global energy mix.

23. 2012 was also the year of the United Nations Conference on Sustainable Development in Rio (Rio+20), at which United Nations Member States agreed to start the development of the Sustainable Development Goals (SDGs) that would build on the MDGs and be part of the post-2015 agenda. In 2015, the new agenda for sustainable development, Transforming the World: The 2030 Agenda for Sustainable Development by 2030 (2030 Agenda), was agreed. This plan includes 17 SDGs and 169 targets that have been determining the work of the Committee on Sustainable Energy since. The work of the sustainable energy subprogramme underpinned all SDGs, but mainly contributed to SGD 7, 9, 11, 12, 13, and 17 and had three objectives:

(a) reconciling the reality of fossil fuels' enduring share of the energy mix with the need to address climate change;

(b) enhancing integration of energy markets in the region; and

(c) facilitating the transition to a sustainable energy system.

24. Two months after the approval of the 2030 Agenda, 187 parties signed the Paris Agreement at the 2015 Paris Conference on Climate Change (COP21) and set in motion mandates and action to mitigate climate change. Since then the world has become increasingly focussed on the urgency and scale needed to reduce net CO_2 emissions to zero to limit expected temperature increases. Recommendations made by the United Nations Climate Action Summit, hosted in New York by the Secretary-General in September 2019, referred to transformations in a number of sectors, including buildings, industry, transport, energy, and agriculture, forestry, and other land uses. The Committee and its subsidiary bodies increasingly have been embracing the complexity and interconnectedness of the energy sector and decided that the challenges of the 2030 Agenda are best met through integrative nexus activities that "energy for sustainable development" offers.

B. Main achievements: a platform for neutral dialogues, international collaboration, and partnerships towards a sustainable energy transition

25. This time period has been characterised by increasing pressure on fossil fuels and the role that fossil fuels play in the energy systems of the ECE region. The gaps between commitments that countries have made and what is needed to achieve sustainable energy have never been larger. Greenhouse gas emissions continue to rise and show no sign of slowing their ascent. Recognising the importance of balancing carbon emissions from fossil fuels to reach net carbon neutrality, countries changed course and requested to develop ambitious instruments to reduce the environmental footprint of fossil energy use. Work has started to focus on integrative, nexus solutions beyond the energy space and includes a focus on gender in energy as well.

26. There are many noteworthy achievements during this time period, linked both to dialogues and consultations on energy security and sustainable energy and guidelines, standards and publications furthering a sustainable energy transition. Find below a selection, but there are many more:

(a) The implementation of the ECE Energy Efficiency 21 Programme (EE21) achieved valuable results during the period 2003-2010 during which a major technical cooperation project was developed and approved towards a more advanced energy efficiency market formation. This activity contributed to building capacities for reducing greenhouse gas emissions in the ECE region. An important feature of EE21 was its leverage effect both within and outside the United Nations development system. Over the years, the activity, which is a comparatively small technical assistance programme, has been able to induce other institutions and donors to support and finance energy efficiency initiatives in ECE member States. This resulted in a grant from three main donors of USD7.5 million for the project Financing Energy Efficiency and Renewable Energy Investments for Climate Change Mitigation (FEEI);

(b) In 2002, as a result of joint work by the Committee on Sustainable Energy and the Committee on Environmental Policy "Guidelines on Reforming Energy Pricing and Subsidies" (ECE/ENERGY/54) were published. These Guidelines were subsequently endorsed by the fifth Ministerial Conference "Environment for Europe" (Kiev, Ukraine, May 2003). The Guidelines provide general guidance to policy makers on how to reform energy pricing and subsidy schemes so as to avoid market distortions, increase economic efficiency and improve quality of energy services. The Guidelines take into account fully the economic environmental and social concerns of society and governments in promoting the sustainable production, transmission and use of energy;

(c) In 2005, ECE started to work on methane issues with the establishment of the Ad Hoc Group of Experts on Coal Mine Methane. This Group has published a number of best practice guidances on coal mine methane and abandoned mine methane;

(d) 2010 saw the first session of the International Forum on Energy for Sustainable Development, held annually since. This Forum is organised jointly by the five

United Nations regional commissions and provides an opportunity for dialogue and capacity building to explore how the United Nations system can help countries and other stakeholders pursue the implementation of the 2030 Agenda. Preparations for the eleventh International Forum on Energy for Sustainable Development are ongoing at the drafting of this document;

(e) Also in 2010, the first version of the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines was published. A revised version was issued in 2016. The Best Practice Guidance recommends principles and standards on coal mine methane (CMM), and its capture and use, including in the oil and gas sector;

(f) In 2014, the Committee endorsed the Revised recommendations of the United Nations Economic Commission for Europe to the United Nations Framework Convention on Climate Change on how carbon capture and storage in cleaner electricity production and through enhanced oil recovery could be used in reducing greenhouse gas emissions. The recommendations relate to how Carbon Capture and Storage (CCS) and CCS for Enhanced Oil Recovery (EOR) should be treated in a Post-Kyoto Protocol Agreement and were transmitted by the Executive Secretary of the ECE to the United Nations Framework Convention on Climate Change (UNFCCC);

(g) In 2015, the Committees on Sustainable Energy and on Housing and Land Management established a Joint Task Force on Energy Efficiency Standards in Buildings. In 2017, they developed and endorsed the Framework Guidelines on Energy Efficiency Standards in Buildings. A revised version of the guidelines were published in 2020. To implement, the ECE also launched a project with partners on high performance buildings to support and accelerate the transformation of the world's building stock. Work to date has sought to operationalize the so-called High-Performance Buildings Initiative, which comprises: 1) a global network of International Centres of Excellence on High-Performance Buildings that will provide on-the-ground implementation assistance for building owners and developers, contractors, architects, engineers and planning officials; and 2) a consortium of universities, the Global Building Network, to undertake both research into building materials, design, and construction and quality education of next generation architects and engineers;

(h) In 2016, the application of UNFC was broadened to embrace both geothermal energy resources and injection projects for geological storage, followed by bioenergy in 2017, and solar and wind energy and anthropogenic resources in 2018;

(i) In 2019, the first phase of the flagship project Pathways to Sustainable Energy was completed, bringing together three modelling institutions and views from the entire expert network to consider the consequences of the ongoing energy transition from all angles, including, ECE subregional challenges and opportunities, technology innovation, adaptive policy responses through an early-warning system; and

C. The third turning point

27. In 2005, the ECE went through another reform and discontinued its "Principal Subsidiary Bodies" and replaced them by Sectoral Committees, reporting to the Executive Committee once a year through a meeting with their chair and vice-chairs. As a consequence, the Committee made the following changes. It:

(a) streamlined its activities to improve cooperation with other institutions, in particular the International Energy Agency (IEA) and the Energy Charter Secretariat. This cooperation could take the form of joint activities, memoranda of understanding, participation in joint events and activities of the subprogramme and vice versa; and

(b) strengthened its activities in the fields of energy efficiency, cleaner energy production, energy security and diversification of energy sources, with consideration for environmental concerns.

28. In 2014, the ECE Executive Committee approved new terms of reference of the Committee and mandates and terms of reference of its six subsidiary bodies, which brought to life the Committee in its current form (ECE/EX/7). In this document, called Decision on matters relating to the Committee on Sustainable Energy, the Committee was mandated to carry out concrete, results-oriented activities in the six work areas energy efficiency, renewable energy, gas, cleaner electricity, resource management and coal mine methane, and thus the six subsidiary bodies still in operation were formed.

V. The present: Accelerating and deepening the transition to sustainable energy systems

A. The Committee on Sustainable Energy and its six subsidiary bodies

29. At present, and following the mandate received in 2014, the Committee is an intergovernmental body that provides member States with a platform for international dialogue and cooperation and is mandated to carry out a programme of work in the field of sustainable energy with a view to providing access to affordable and clean energy to all, in line with the 2030 Agenda, and to help reduce greenhouse gas emissions and the carbon footprint of the energy sector. The six subsidiary bodies are as follows:

(a) Group of Experts on Energy Efficiency;

(b) Group of Experts on Renewable Energy;

(c) Group of Experts on Cleaner Electricity Systems;

(d) Group of Experts on Coal Mine Methane;

(e) Group of Experts on Gas; and

(f) Expert Group on Resource Management.

1. Group of Experts on Energy Efficiency (GEEE)

30. Work on energy efficiency was initiated in 1991 to improve energy efficiency through stronger regional cooperation. The GEEE was established in 2014 as a result of the restructuring processes mentioned in para. 28 and 29. Its work has been concentrating on delivering the 2030 Agenda through regulatory and policy dialogue addressing financial, technical and policy barriers and on sharing experience and best practices in the ECE region. Key areas of work are industry, buildings, and digitalization in energy efficiency. The Work Plan of the Group of Experts on Energy Efficiency (ECE/ENERGY/2021/10) provides more information.

2. Group of Experts on Renewable Energy (GERE)

31. In 2014, the ECE established the GERE to carry out action-oriented, practical activities that focuses on significantly increasing the uptake of renewable energy in the ECE region, as mentioned in para. 28 and 29. The focus has been on tracking the progress of renewable energy uptake in the region, while maintaining a dialogue. This is done by arranging multi-stakeholder “hard talks” in countries to overcome bottlenecks and increase investments and the total share of renewable energy in the energy mix and by collecting and completing data and statistics in 17 countries of the east in partnership with the IEA and the Renewable Energy Network of the Twenty-first Century (REN21). The Work Plan of the Group of Experts on Renewable Energy (ECE/ENERGY/2021/12) provides more information.

3. Group of Experts on Cleaner Electricity Systems (CES)

32. Previously known as the Expert Group on Cleaner Electricity Production from Fossil Fuels, this expert group was established in 2006, consolidating the Ad-Hoc Group of Experts on Coal in Sustainable Development and the Ad-Hoc Group of Experts on Electric Power. The focus is on activities that significantly reduce greenhouse gas emissions from electricity production from fossil fuels, including recent work on carbon capture utilization and storage, pathways to sustainable energy and carbon neutrality concepts for the ECE region. It is also this expert group which features work on technology interplay and integrating renewable energy into the grid in collaboration with the GERE. The Work Plan of the Group of Experts on Cleaner Electricity Systems (ECE/ENERGY/2021/8) provides more information.

4. Group of Experts on Coal Mine Methane (CMM)

33. The Ad Hoc Group of Experts on Coal Mine Methane was created in 2005 with its main objective to promote the reduction of greenhouse gases from coal mines. In 2014, the group was renamed the Group of Experts on Coal Mine Methane with a focus on the recovery and use of methane to make coal mines safer and reduce the risk of explosions. A key achievement of the Group is the development and publication of the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines. In 2011, the United Nations Economic and Social Council (ECOSOC) recommended it for global application (Decision 2011/222). Through research and workshops on recovery and use of methane, the CMM works towards sustainable methane management and has been leading in a new flagship activity on just transition concepts upon request by the Committee. The Work Plan of the Group of Experts on Coal Mine Methane (ECE/ENERGY/2021/9) provides more information.

5. Group of Experts on Gas (GEG)

34. The GEG was established in 2013, with its main function to provide a forum for multi-stakeholder dialogue on ways to promote the sustainable and clean production, distribution, and consumption of gas in the ECE region. The GEG has recently taken a lead role in renewable gases and a hydrogen economy, together with other groups of experts. Work has started on developing internationally recognized terminology and qualifying hydrogen environmental properties. Currently, the group is working with Ukraine to create a Roadmap for Hydrogen Infrastructure within the Country. This infrastructure helps analyse international practices, potential and cost-efficiency methods for hydrogen in Ukraine. The Work Plan of the Group of Experts on Gas (ECE/ENERGY/2021/11) provides more information.

6. Expert Group on Resource Management (EGRM)

35. In 2009, the Expert Group on Resource Classification, was established to continue the work of the Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology on UNFC that started in 1997. The Group was renamed as the Ad Hoc Group of Experts on Supply of Fossil Fuels in 2004 and then reverted back to Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology in 2005. In 2019, the Expert Group was renamed the Expert Group on Resource Management (EGRM) to recognize the importance of a wider approach that resource management has in economic development and to help broaden applications and approach. EGRM is currently working on extending UNFC to cover hydro and marine energy and groundwater, implementation of UNFC at country level, as well as establishment of International Centres of Excellence on Sustainable Resource Management and development of the United Nations Resource Management System. The Work Plan of the Expert Group on Resource Management (ECE/ENERGY/2021/7) provides more information.

B. Aspirations: leadership towards sustainable energy systems

36. Looking forward, the Committee recommended priority actions that are sensible economically, environmentally, and socially under all circumstances and that should be pursued to drive achieving the 2030 Agenda, namely decarbonisation of societies and attaining carbon neutrality, sustainable resource management, energy efficiency improvements in buildings and industry, and methane management in the extractive industries. In past sessions, the Committee defined the following focus areas:

(a) Policy options to attain sustainable energy and work on deep transformation of the energy system through cleaner electricity: decarbonizing the economy and getting to net zero, modernisation of energy infrastructure, and work on a hydrogen economy;

(b) UNFC and the United Nations Resource Management System, including a network of International Centres of Excellence on Sustainable Resource Management (ICE-SRM). The centres will build national and regional capacities in countries to apply UNFC and UNRMS to all energy and mineral resources to enhance investment in the resource sector and to accelerate countries' attainment of the 2030 Agenda;

(c) Methane management in extractive industries building on the existing best practice guidance documents, namely for monitoring, reporting and mitigating methane emissions in the oil and gas sector, and for effective methane recovery and use from abandoned coal mines (the latter was endorsed by ECOSOC in 2021 and recommended for global dissemination (Decision 2021/249). Work will focus on capacity building and shared experiences of methane management tools;

(d) Implementing the High-Performance Buildings Initiative, activities will include extending both the global network and the university consortium. Additional work will be undertaken to develop a library of case studies demonstrating global applicability of ECE's Framework Guidelines for Energy Efficiency Standards in Buildings; and

(e) Continuing international dialogues on the 2030 Agenda including the annual sessions of the International Forum on Energy for Sustainable Development and multi-stakeholder dialogues on renewable energy in ECE countries.

VI. Peering forward to 2050

A. Revised strategic review of the sustainable energy subprogramme

37. At the drafting of this document, the Committee and its member States have been developing a forward-looking strategic approach on energy. This development has involved a year-long ongoing stakeholder consultation process, resulting in the document called Strategic review of the ECE sustainable energy subprogramme (ECE/ENERGY//2021/4). If approved by the Committee in this session, it will lay the groundwork for the subprogramme's work in the future. The focus is on acceleration of country commitments and objectives on sustainable energy, all-the-while reflecting United Nations' scale, scope, role, and values in terms of: impact, political relevance, visibility, power to inspire, reputation, attractiveness for resourcing, resource efficiency, nexus contributions, and gender benefits.

38. Recognizing that ECE member States take different views regarding the use of fossil fuels, CCUS, and nuclear power, the current strategic priorities for the subprogramme include sustainable resource management; high-performance buildings; methane management and reduction; carbon neutrality; accelerating the uptake of renewable energy; investment guidelines for more accessible, reliable and sustainable energy services; and helping member States explore efficient and effective pathways to a sustainable energy future. Activities recommended for the future, pending available resources, include: measuring and monitoring energy-related SDGs; improving energy efficiency across all sectors; deploying sustainable

hydrogen solutions; ensuring just and inclusive transitions; studying how to address efficient use of energy resources, and in this regard the impact of subsidies as well as carbon pricing options; assessing energy market/power market design; removing barriers to energy trade; enabling optimal deployment of digitalization; ensuring energy system resilience; and assuring energy security. All this is explained in the many documents presented to the Committee in this session, including the work plans of the six subsidiary bodies.

39. Documents like ECE member Sates delivering the 2030 Agenda for Sustainable Development and the Paris Agreement – A Commitment Trifecta (ECE/ENERGY/2021/17) constitute important outreach possibilities, of which the subprogramme will produce more to allow for a faster and targeted outreach programme on bolder action across sectors. The outcome of this work would be the development of normative instruments that are appropriate and necessary for the ECE region. Once those instruments are in place, whether best practice guidance, standards, regulations, or conventions/protocols, the Committee and its subsidiary bodies could support deployment through capacity-building, dissemination, and training.

VII. The sustainable energy subprogramme

40. The Committee and its subprogramme can look back at 30 eventful and turbulent years, during which the urge of countries to find solutions to pertinent energy problems has only increased. ECE has unique value propositions given the role that fossil energy plays in the region, the specific make-up of its membership, and ECE's institutional capabilities for developing normative instruments. The ECE sustainable energy subprogramme's expert communities have enormous substantive and innovative capability across the range of energy topics, and the subprogramme can mobilise countries, the private sector, organizations, civil society, and academia to work toward meaningful outcomes, as it has shown over these past 30 years.

41. Progress can only be achieved through partnerships and hardworking, forward looking people, groups, coalitions, and processes. Annex II presents some of the people who have made things happen, including a list of directors for the energy subprogramme from the beginning to today.

VIII. Famous last words

42. Created in 1947 to ensure the coal, gas, and electricity supplies in an east-west post war context, the ECE energy subprogramme's work has evolved over the years. While energy security remains a core mission, the Committee on Sustainable Energy today is at the centre of the global sustainable energy debate, focusing on a wide variety of issues, ranging from energy efficiency and renewable energy to resource management, methane management, gas, cleaner electricity and carbon capture and storage. Today the Committee is at the heart of the global dialogue led by the United Nations on energy, partnering with stakeholders to enhance reliability, affordability, and sustainability of current and future energy systems.

43. The current objective of ECE's sustainable energy subprogramme is to help member States ensure that energy makes an optimal, enduring contribution to countries' economies, their peoples' quality of life, and responsible environmental stewardship. If approved during this Committee's session, the subprogramme will help member States make concrete, measurable progress on energy in the following areas:

(a) Transform energy in support of the 2030 Agenda;

(b) Ensure just transitions;

(c) Address the nexus challenges of the 2030 Agenda (water, food, cities, resources, etc.);

(d) Ensure access to affordable, reliable, secure, and quality energy services;

(e) Improve energy productivity and energy efficiency;

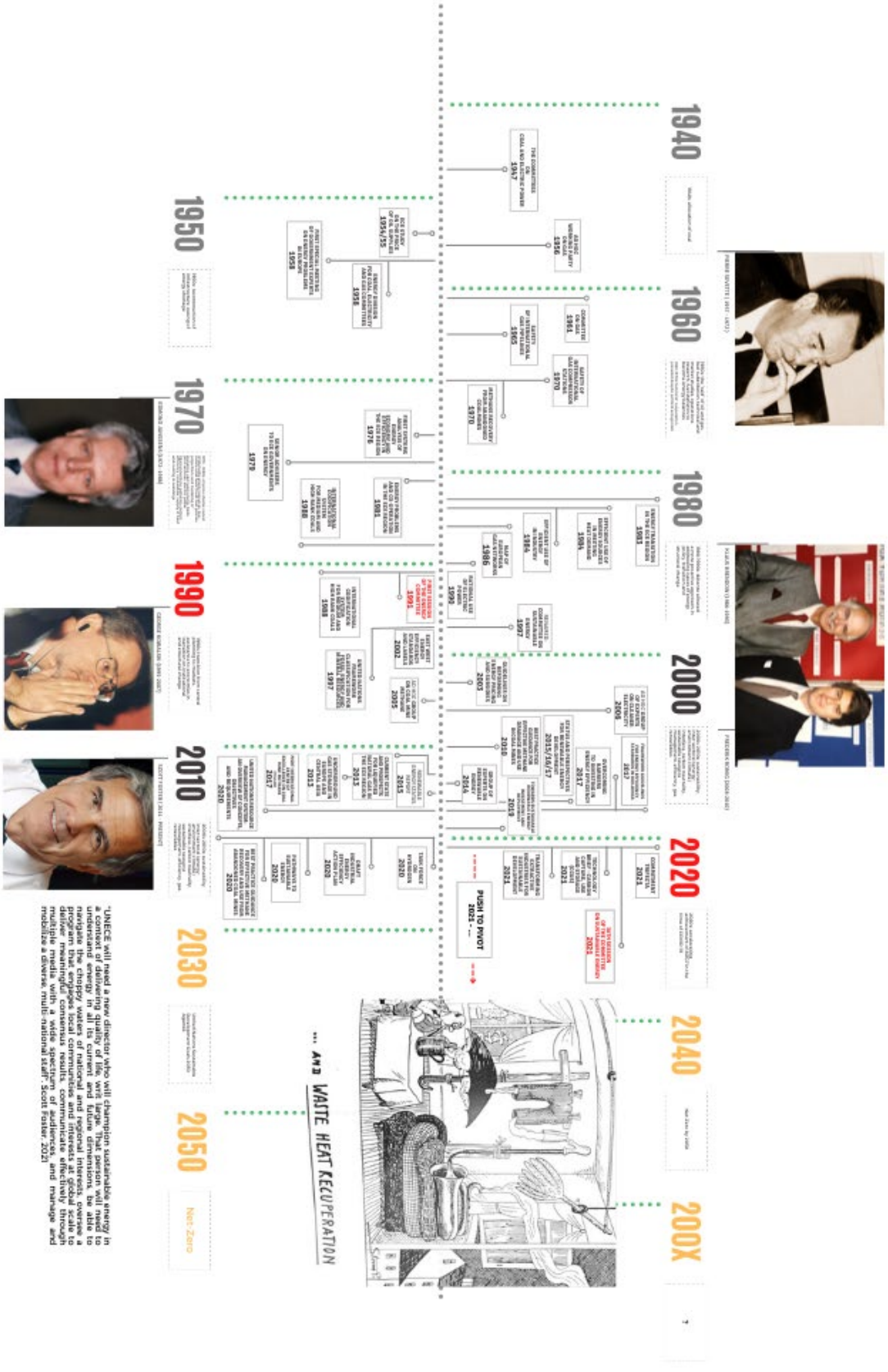
(f) Achieve carbon neutrality in the broader context of energy for sustainable development; and

(g) Track progress toward the objectives and taking corrective action as needed.

44. The Sustainable Energy Division hopes that reading this document has allowed reflection about the change that the energy world has undergone over the past 30 years. The Division is grateful to the ECE member States and the wide supportive network and hopes to receive pertinent input on key questions and solutions: Which questions should we ask to evolve further? Which solutions should we seek? How can collaboration and cooperation be strengthened further?

45. This document is presented to the Committee and its expert network for information and to note with appreciation the achievements of the Committee on Sustainable Energy over the past thirty years, notably early on in the areas of energy security dialogue, subsidies and pricing, coal, and gas, and more recently in supporting energy system transitions, reducing the environmental footprint of energy, and sustainable resource management.

Annex I
Timeline of historic events



Annex II

Directors of the sustainable energy subprogramme

Years:	*Director:*
1957-1971	Pierre Sevette
1972-1986	Edmond Janssens
1986-1993	Klaus Brendow
1995-2007	George Kowalski
2008-2010	Frederic Romig
2011 - present	Scott Foster

List of Committee Chairs

Year:	*Coal Committee Chair:*	*Country:*	*Electric Power Committee Chair:*	*Country:2*	*Gas Committee Chair:*	*Country:3*
1947	P. Porter	United States	R. Schaffner	Luxembourg	-	-
1948	P. Porter & T. Buyse	United States + Belgium	P. Ailleret	France	-	-
1949	T. Buyse & J. Brooke	Belgium + United Kingdom	P. Ailleret	France	-	-
1950	J. Brooke	United Kingdom	P. Ailleret & P. Smits	France + Belgium	-	-
1951	J. Brooke	United Kingdom	P. Smits	Belgium	-	-
1952	J. Brooke & F. Vinck	United Kingdom + Belgium	P. Smits	Belgium	-	-
1953	A. Williams	United Kingdom	P. Smits & A. Rusck	Belgium + Sweden	-	-
1954	A. Williams	United Kingdom	A. Rusck	Sweden	-	-
1955	A. Williams	United Kingdom	A. Rusck	Sweden	-	-
1956	R. Duflou	Belgium	A. Rusck	Sweden	B. Nilsson	Sweden
1957	R. Duflou	Belgium	R. Hochreutiner	Switzerland	B. Nilsson	Sweden
1958	R. Duflou	Belgium	R. Hochreutiner	Switzerland	J. Le Guellec	France
1959	R. Duflou	Belgium	R. Hochreutiner	Switzerland	J. Le Guellec	France
1960	R. Duflou	Belgium	R. Hochreutiner	Switzerland	J. Le Guellec	France
1961	B. Krupinski	Poland	R. Hochreutiner	Switzerland	J. Le Guellec	France
1962	B. Krupinski	Poland	R. Hochreutiner	Switzerland	J. Le Guellec	France
1963	B. Krupinski	Poland	R. Hochreutiner	Switzerland	J. Le Guellec	France
1964	R. Duflou	Belgium	G. Serbinovski	USSR	J. Le Guellec	France

Year:	*Coal Committee Chair:*	*Country:*	*Electric Power Committee Chair:*	*Country:2*	*Gas Committee Chair:*	*Country:3*
1965	R. Duflou	Belgium	G. Serbinovski	USSR	J. Le Guellec	France
1966	B. Krupinski	Poland	D. Tonini	Italy	J. Le Guellec	France
1967	B. Krupinski	Poland	J. Garrido	Spain	G. Koranyi	Hungary
1968	R. Duflou	Belgium	A. Georgescu	Romania	G. Koranyi	Hungary
1969	R. Duflou	Belgium	A. Georgescu	Romania	L. Castellano	Spain
1970	B. Krupinski	Poland	W. Fiszer	Poland	L. Castellano	Spain
1971	B. Krupinski	Poland	S. Lalander	Sweden	V. Drug	Romania
1972	R. Duflou	Belgium	S. Lalander	Sweden	C. Verkade	Netherlands
1973	R. Duflou	Belgium	G. Vajda	Hungary	G. Robert	France
1974	Z. Nowak	Poland	G. Vajda	Hungary	D. Sidorov	USSR
1975	Z. Wegrzyk	Poland	G. Colamarino	Italy	-	-
1976	R. Scheid	Federal Republic of Germany	G. Colamarino	Italy	M. Sidorenko	USSR
1977	R. Scheid	Federal Republic of Germany	N. Rusnak	Czechoslovakia	G. Robert	France
1978	Z. Wegrzyk	Poland	N. Rusnak	Czechoslovakia	G. Robert	France
1979 - 1990	No information found in files					

Years:	*Committee Name:*	*Chair:*	*Country:*
1991-1992	Energy Committee	Jacques Lambotte	France
1993-1994	Energy Committee	Istvan Szergenyi	Hungary
1995-1996	Energy Committee	Alexander Gritsenko	Russian Federation
1997-1998	Committee on Sustainable Energy	Vitaly Bushuev	Russian Federation
1999-2001	Committee on Sustainable Energy	Henri Ch. Blanc	France
2002-2003	Committee on Sustainable Energy	Miles Greenbaum	United States
2004	Committee on Sustainable Energy	*No session held*	
2005	Committee on Sustainable Energy	Laszlo Molnar	Hungary
2006-2009	Committee on Sustainable Energy	Jean-Christophe Füeg	Switzerland
2010-2012	Committee on Sustainable Energy	Sigurd Heiberg	Norway
2013	Committee on Sustainable Energy	Gunnar Gjerde	Norway
2014-2021	Committee on Sustainable Energy	Jürgen Keinhorst	Germany

Annex III

Work carried out by the three original committees

I. The Coal Committee

1. 1947-1950: The Coal Committee was given the task of contributing to the allocation of coal, which in 1950 covered 89% of the energy demand in Europe. During the first three years, the Coal Committee distributed some 60 million tons of coal within Europe. The work done by the Committee created an international cooperation that transcended the energy sector.

2. 1950-1960: Research on rational use of solid fossil fuels started. Studies on the preparation and utilization of solid fuels, and the range of coals which could be substituted for traditional coking qualities were conducted. From 1952 internationally comparable statistical data on coal was prepared and published annually. In 1956 the first international classification of hard coals by type was presented.

3. 1960-1970: Petroleum, natural gas, and nuclear energy was discovered, and the coal market found itself in a crisis. To stabilize the market the Committee arranged a Meeting of Directors of National Mining which later became an annual meeting. Research and studies were conducted on the utilization of waste products from the coal industry, as well as on environmental protection – particularly smokeless, and air and water pollution caused by coking plants. The Committee started to submit an annual economic study of the coal situation in Europe.

4. 1970-1980: A renewed interest in coal on the energy market. The Committee conducted an analysis of the fluctuation in the market to predict future implications in the market. They made the Meeting of Directors of National Mining Research Institutes into a continuing body. The research on utilization of coal and reduction of waste within the coal industry was increased.

II. The Electric Power Committee

5. 1947-1950: When the ECE inherited the Electric Power Committee their focus was on promoting economic and technological progress and cooperation in the ECE region. As part of this work the Committee studied possible technological developments, with promising international prospects, on topics such as low-grade fuels, hydro recourses, and pumped storage. During this time, they also recommended specifications and sizes of turbogenerators to the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC).

6. 1950-1960: Many of the basic activities of the Committee were initiated such as surveys on the electric power situation in Europe. In 1956 the first annual and quarterly bulletins of electric energy statistics for Europe were submitted.

7. 1960-1970: The Committee extended its work to include hydroelectric schemes and established the Group of Experts on Electric Power Stations. Work on thermal power stations and the combined production of electricity and heat was conducted by the Committee. Four symposia were arranged on aspects of power production. In collaboration with the International Atomic Energy Agency (IAEA), the Committee undertook work on nuclear power.

8. 1970-1980: The Group of Experts on the Relationship Between Electricity and the Environment was established. They studied the connection between the operation of electric power stations and air, water, and nuclear pollution, and published the brochure “Electric Power Networks,” which became the first in a series of documents published by the Group.

9. 1980-1990: The Group of Experts on the Rational Use of Electricity and Electricity Distribution Outside the Major Urban Areas was established to work on rural electrification.

To address the increase of extremely high-rated voltages introduced to electric power systems a seminar on High Voltage Direct Current Techniques was arranged in 1985.

III. The Gas Committee

10. In 1956, at its eleventh session, the Commission established the Ad Hoc Working Party on Gas Problems. In 1961 the ad hoc Working Party became the Gas Committee as the importance of gas grew in the European energy market. The Committee reviewed the situation and prospects of the gas industry annually, examined technical problems relating to transport and storage of gas, examined problems arising from the distribution of gas, studied problems of the evaluation natural gas resources, studied problems associated with the utilization and marketing of LPG (Liquefied Petroleum Gas), examined the investment and financing requirements of the gas industry, and studied environmental aspects.

11. In 1977 and 1986 Symposia on The Gas Industry and the Environment were arranged to discuss scientific, technical, and economic aspects of the industry was held. Two symposia on the LPG situation in the ECE region covering the period of 1980-1990 and 1985-2000 were held in 1981 and 1985, respectively. To address the increasing demand, a Seminar on Offshore Natural Gas Technology with a focus on the development of technology related to production, transport and processing was held in 1984.

12. The work of the Committee was split into four groups of experts. The Group of Experts on the Use and Distribution of Gas were given the task of analyzing and examining studies on the use and distribution of gas in various gas-consuming sectors of the economy.

13. The Group of Experts on the Transport and Storage of Gas studied the economic, legal, and technical aspects of various international natural gas transport systems. In 1965 they published a safety code for gas pipelines, and in 1970 a safety code for compressors and metering stations.

14. The Group of Experts on Natural Gas Resources studied the development, application, and problems of methods of natural gas exploration. They prepared and published an international map of natural gas fields in Europe and an international map of gas transmission networks in Europe.

15. The Group of Experts on Gas Statistics and Forecasting Problems cooperated with the Conference of European Statisticians to develop and improve the gas statistics and their international comparability.

Annex IV

The Energy Efficiency 2000 and 2021 Projects

1. At the Ministerial Conference held in Bergen, Norway, May 1990, the ECE member states agreed to:

"*... initiate an ECE region wide campaign "ENERGY EFFICIENCY 2000" to enhance trade and cooperation in energy efficient, environmentally sound techniques and management practices to close the energy efficiency gap between actual practice and best technologies, and between ECE countries, in particular East and West, through national actions, bilaterally and especially through the Economic Commission for Europe*" - Bergen Ministerial Declaration

2. The project was started in February 1991 and ended in May 2000. It was overseen by the Steering Committee of the Energy Efficiency 2000 Project and its Ad Hoc Groups of Experts. It was supported by regular budget and extrabudgetary resources and had a total budget of USD4.6 million. The project consisted of five components:

(a) Exchange of information;

(b) Achieve practical and tangible results in energy efficiency demonstration zones through innovative mechanisms to reduce investor risks and improve attractiveness of energy efficiency projects;

(c) Share and disseminate lessons and results from demonstration zones within each country and among the ECE Transition Economies;

(d) Built capacity to start and develop energy efficiency businesses (e.g., training, institutional reform guidelines, financing mechanisms); and

(e) Reduce or remove market barriers (e.g. sources of capital, norms, standards, and labelling).

3. In 2000, when the project reached its conclusion, it had:

(a) built effective mechanisms for the exchange of information;

(b) achieved practical and tangible results in energy efficiency demonstration zones through innovative mechanisms to reduce investor risks and improve attractiveness of energy efficiency projects;

(c) disseminated lessons and results from demonstration zones through workshops, seminars, conference and the Internet;

(d) made important progress in building capacity to start and develop energy efficiency businesses (e.g., training, institutional reform guidelines, financing mechanisms);

(e) undertaken programmes to reduce or remove market barriers (e.g., sources of capital, norms, standards, and labelling).

4. At its eighth session, in 1998, the Committee approved the preparation of the Energy Efficiency 21 (EE21) project, that would replace the EE2000 project at its conclusion in May 2000. The objective of the project, when it started, was:

"*... to assist ECE member States to implement greenhouse gas mitigation strategies and to develop related energy efficiency investment projects at the conclusion of the third phase of the Energy Efficiency 2000 Project.*" - ENERGY/WP.4/2000/4

5. The EE21 project developed into a region-wide project that assisted economies in transition to develop and promote sustainable energy policies, pursue energy efficiency strategies, reduce greenhouse gas emissions to meet international treaty obligations, and enhance security of energy supplies. This was done by producing specific outputs from operational activities in the industry, housing and services, transport, and energy sectors through national action, bilaterally and multilaterally.

6. The project continued for 10 years and ended in 2010, during which time it assisted in developing several inter-regional, sub-regional and country specific projects.

Annex V

The Gas Centre

1. In 1994, Central and Eastern European countries had started the transition from planned to marked economies. The gas industries in these regions needed help with restructuring as they moved towards a more decentralized and market-oriented system. With a great interest, demand and engagement from member states the Promotion and Development of a Market-based Gas Industry in Economies in Transition - the Gas Centre, was established as an extra-budgetary industry-financed project within the ECE.

2. The Gas Centre was fully funded by extrabudgetary funds provided by 11 major gas companies within the ECE region. The companies were: BOTAS Petroleum Pipeline Corporation (Turkey), EDF (France)), GasNatural Fenosa (Spain), GAZPROM (Russia), KazMunaiGaz (Kazakhstan), NJSC NAFTOGAZ/UKRTRANSGAS AC (Ukraine), PLINOVODI (Slovenia), ROMGAZ (Romania), SOCAR (Azerbaijan), SRBIJAGAS (Serbia), and STEG (Tunisia).

3. For the first year of operation the Gas Centre had a budget of USD500,000. The Gas Centre's main objective was set to:

"... enhance cooperation, coordination and exchange of information, knowledge and experience between Governments, gas enterprises and related governmental and non-governmental institutions in developing and implementing market-based policies, instruments and principles in the gas industry, as the transition process proceeds to achieve national policies and objectives in the overall energy programme. Natural gas is deemed an essential component in a number of countries of central and eastern Europe and the former Soviet Union" - ENERGY/WP.3/AC.11/INF.1

4. By 2000 the original goals of the Gas Centre were met, and the mandate was expanded to include:

(a) being a platform for discussion of strategic issues and developments in the European gas industry;

(b) developing common understandings and approaches.

5. They were responsible for organizing Industry Forums and meetings of Task Forces on Supply, Infrastructure and Markets and on Gas Markets and Regulation, and meetings of the Database Technical Committee regularly.

6. In 2013 the member States renewed the mandate of the Gas Centre, asking it to reinforce its role as a platform for engagement between governments and industries. The Gas Centre continued to function as a point of public cooperation between the gas industries for 21 years and ended in 2015. During its last year of operation the Gas Centre had a budget of USD 461,000.

Annex VI

UNFC and UNRMS

1. In 1992, ECE started to work on a resource classification system, as the demand for a standard reporting system for reserves and resources of solid fuels and mineral commodities became apparent from member States. Work on the classification system started at the same time as the UN was arranging the United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit.

2. The first version of the United Nations Framework of Classification (UNFC) was approved in 1997 and was called the United Nations International Framework Classification for Reserves/Resources – Solid Fuels and Mineral Commodities of 1997 (UNFC-1997). ECOSOC endorsed UNFC-1997 for worldwide application in 1997 (Decision 1997/226).

3. In 2002, the Committee established the Ad Hoc Group of Experts on Harmonization of Fossil Energy and Mineral Resources Terminology. The Group was tasked to harmonize the terminology applied within the different energy sectors and make UNFC-1997 applicable worldwide.

4. In 2004, a revised version of the Classification was published, and it was renamed UNFC for Fossil Energy and Mineral Resources 2004 (UNFC-2004) and extended to include petroleum and uranium. A stronger and simpler version of the classification, named UNFC for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC-2009), was published in 2009 by the Ad Hoc Group of Experts. Starting in 2010 the Group, now renamed as the Expert Group on Resource Classification, prepared specifications, or rules of application, to make UNFC-2009 fully operational. UNFC is now applicable to minerals, petroleum, nuclear fuel resources, bioenergy, geothermal, wind, solar, anthropogenic resources, and injection projects for geological storage, with work underway on hydro and marine energy as well as groundwater. ECOSOC updated the endorsement for global application of UNFC-2004 in 2004 (Decision 2004/233).

5. At its twenty-sixth session, the Committee agreed to rename UNFC-2009 as the United Nations Framework Classification for Resources (UNFC). In 2019, the Expert Group – now renamed as the Expert Group on Resource Management (EGRM) – presented a revisited version of UNFC that meets the requirements of different resource sectors, and that complies with the sustainable resource management called for by the 2030 Agenda. ECOSOC endorsed the updated UNFC of 2019 and recommended it for global application in 2021 (Decision 2021/250).

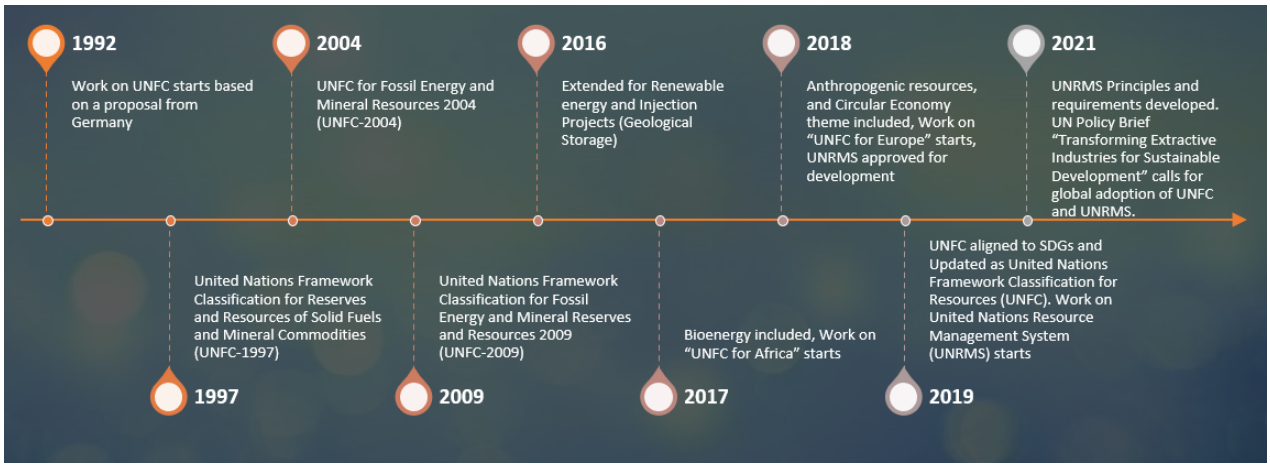


Image 6: UNFC and UNRMS timeline

6. At its twenty-seventh session, the Committee approved the development of a comprehensive resource management tool, the United Nations Resource Management System (UNRMS) with UNFC at its core that can help improve systemic efficiency in

resource production and environmental and social performance. Fundamental principles and requirements for UNRMS were developed in 2021.

7. The UN Secretary-General's Global Roundtable on Extractive Industries "Financing for Development in the Era of COVID-19 and Beyond" held on 25 May 2021, launched a policy brief "Transforming Extractive Industries for Sustainable Development" which calls on Member States to *inter alia* "implement a shared principles-based, integrated, sustainable resource management framework using tools such as the existing United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) under development."

Annex VII

Some of the people that made things happen

George Kowalski 1995

Edmond Janssens, 1986

Pierre Sevette, 1966

Fred Romig und Klaus Brendow, 1988

Scott Foster, 2011

above: Slavov, Stefanopoulos, Romig , Ms. Borota, Vilogorac, Mrs.Veloso, Gréaume, Brendow, Nadezhdin; center: Mrs. Sheppard, Cohen, D'Andrea; below: le Marchand, Mrs. Andorfer, Mrs. Kiciman, Mrs. Healy Christmas 1993