



UNECE

United Nations Economic Commission for Europe

Independent Evaluation Report

**Effectiveness and impact of
the UNECE Sustainable Energy sub-programme
“Review of the case studies of the application of
best practices guidance for
coal mine methane management”**

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List of abbreviations and acronyms

BPG	--	Best Practice Guidance
CMM	--	Coal Mine Methane
GoE	--	Group of Experts
ICE	--	International Centre of Excellence
ILO	--	International Labour Organization
ISO	--	International Standardization Organization
MoU	--	Memorandum of Understanding
OECD	--	Organisation for Economic Cooperation and Development
PPP	--	Public-Private Partnership
SDG	--	Sustainable Development Goals
UNDP	--	United Nations Development Programme
UNECE	--	United Nations' Economic Commission for Europe
UNEG	--	United Nations Evaluation Group
UNFCCC	--	UN Framework Convention on Climate Change

Executive Summary

1. This evaluation analyses the relevance of the work performed by the Group of Experts (GoE) on coal mine methane (CMM) contributing to the implementation of the United Nations Economic Commission of Europe (UNECE) sub-programme on sustainable energy; it also assesses the design and management, results efficiency, effectiveness and the sustainability of the UNECE's activities creating the case studies on the application of best practice guidance for CMM.
2. The main objective of GoEs activities was to contribute to strengthening the capacities of UNECE member States to implement best practices in CMM management. The set of activities aimed at increasing the knowledge level on the issue of coal mine methane, and to promote mine workers' safety and the reduction of greenhouse gas emissions from coal mines through activities facilitating the recovery and use of methane.
3. In the context of common efforts to address safety concerns and to mitigate methane effects on the environment, and addressing requests from UNECE member States, the activities and results are aligned with the objectives of the Sustainable Energy Division, and contribute to achieving four of the Sustainable Development Goals (SDGs), making the project's relevance to be *Excellent*.
4. The two Work Plans of the GoE on CMM (2014-2015, and 2016-2017 respectively) foresaw a set of seven activities, logically interlinked: creating knowledge through the internal expertise and by cooperating with other specialized structures; synthesizing the knowledge in the BPG; stimulating the creation of Case Studies and centralizing the information; disseminating the knowledge (electronic, in print, and through conferences and workshops); and facilitating the creation of International Centres of Excellence (ICE) as recognized depository of relevant knowledge. Further on, the GoE on CMM provided advice and enhanced collaboration with other international organizations and groups of experts, and expanded the group's scope of work. The activities have been implemented delivering the planned outputs, with the expected level of quality and timeliness, but the logical chain between outputs, outcomes and impacts hasn't been fully defined. Performance indicators are not set and outcome results are not measured. As a result, the effectiveness is rated *Partly Satisfactory*.
5. The planned activities have been implemented according to the schedule. The financial resources have been adequate, despite of some intermediary activities hindered by lack of financing. Having achieved timely results, with adequate financing (except for the E-187 project), high cost-efficiency in implementing activities, but burdened by personnel understaffing within the Division, the efficiency of activities proves to be *Partly Satisfactory*.
6. The GoE's Terms of Reference and annual Work Plans embedded the sustainability element at several levels: creating a knowledge base captured in the BPG, increasing capacities by training people, and creating the ICEs. The most important result of the GoE's work is the amount and quality of the technical work, as well as collecting and refining information from across the world. Given the current transformation towards the information-based society, this knowledge depository constitutes a key element for sustainability. As the activities focused on collecting, structuring and dissemination of knowledge, the inherent capacity building is a strong element of sustainability. With the promising prospects for expanding the ICE network, the project has an *Excellent* sustainability rating.
7. The *lesson learnt* is that UNECE is properly employing the comprehensive approach to combine world class technical expertise with the long-established capacity to bring together policy makers. The intergovernmental dialogue and negotiations mechanisms are capable of generating political will, to alter national legal frameworks towards streamlining technical processes.

8. The analysis of activities and their results, as well as of the role of the Division and Group of Experts on CMM concludes with three strategic recommendations:

- *Recommendation 1:* Strategically, the Sustainable Energy Division should continue using the mixed technical-political approach: the technical level brings together state-of-the-art knowledge, while the political dialogue can stimulate the politics in the UNECE member States to intensify the adoption of the best practices in coal mine industry. For the Division, the GoE on CMM brings tangible results and an added value, strengthening the position of the Secretariat.
- This recommendation will play an even stronger role in the context of SDGs. It is also likely to gain importance as the biggest coal extracting countries become increasingly open and interested in adopting the best standards in safety and environmental protection;;
- *Recommendation 2:* The GoE should generate more knowledge applicable to broader extraction industry, in order to sustain the results, given the excellent relevancy and sustainability. This recommendation applies provided that a draft Work Plan of the Group of Experts for 2018-2019, and the GoE's request for extension of its mandate is approved during the twenty-sixth session of the Committee on Sustainable Energy.

The mandate extension should encompass work on the transition of traditional mining companies to become integrated service companies. It should also explore the impact this transition might have on the contributions of the energy sector on sustainable development and possible formal adoption and implementation of the standards. Recommendation 8 lists several stakeholders to be consulted in this process;

- *Recommendation 3:* It is recommended to employ a network of "champions" to lead the work on implementing the recommendations created by GoE, a practice frequently observed in policy making. The "champions" would be key political figures in governments of UNECE member States, advocating for legislative changes, eventually involving the mining companies in setting national industry standards;
- *Recommendation 4:* Given the raising importance of the private sector for sustainable development (also enshrined in the SDGs), the Division and GoE should frame ways to involve the private sector in enhancing the results of their activities. The partnerships with the private sector could pave the way to adopt (voluntary) industry standards, could further facilitate the knowledge transfer, and could augment extra-budgetary resources.

9. On operational level, the following five recommendations might enhance the results of the activities already performed by the GoE:

- *Recommendation 5:* Strengthen internally the Secretariat to enable constant and predictable support services to the GoE. This would require a multi-level approach:
 - o Staffing: Ensure the Senior staff is able to focus on substantial/political work, and the junior staff is sufficient and constantly employed. Ideally, one regular staff should be allocated entirely for the GoE support, to enable work continuity;
 - o Resourcing: secure sufficient regular budget for the normal functioning of the GoE (e.g. some experts are not able participate in meetings as their organizations do not have enough resources to finance travel), and for the most significant activities agreed in the bi-annual Work Plans;
 - o Build strategic partnerships with potential donors (governmental / public agencies, mining companies, other private sector representatives) and agree multi-annual budget for the planned activities, in order to increase predictability and planning;
- *Recommendation 6:* The GoE should initiate a process to establish agreed measuring standards related to its work: incidents / explosions statistics and reporting, measure capture and commercial use of methane, measure the GHG emission reductions; and common evaluation methodologies for all fossil sources of energy. This task has two constraints: a) this type of information is under direct control of safety and environmental bureaus and agencies resident in

the member States, and their reliability and comparability would be a challenge; and b) it would be difficult to establish a direct attribution of the GoE's activities to the final results – number of accidents or quantity of emissions; rather it would be a contribution to achieving set targets. The shift from output oriented measuring to outcomes indicators will support the Division and the Group of Experts in presenting more convincingly the results of their work, especially given the international rhetoric related to results based management and the raising importance of the private sector in sustainable development;

- *Recommendation 7:* As an emerging practice, consider creating a “Training of Trainers” program implemented through the ICEs, to expand the knowledge base and specialist community (ideally also involving an academic program, or even creating specialized studies at higher education level). This approach should also consider elements of integrating capacity building measurement and reasonable ways of integrating results measurement into future projects;
 - *Recommendation 8:* To maximise sustainability, consider a more focused engagement with technical community, policy makers in UNECE member States, other UN System organizations, financial markets, private sector, NGOs. It is important to bring all stakeholders to dialogue, to establish common action plan and to create the legal frameworks within the UNECE member States. For the European Union Member States, it would make sense to create a strategic partnership / technical involvement of the EU bodies responsible with energy resources, to include best practices in the national legislation.
10. As a general recommendation (*Recommendation 9*), it is advisable for the Division to include a stronger Results Based Management approach when creating project documentation and reports. This would make the results easily understandable to stakeholders, thus increasing credibility and evaluability. In turn, the future evaluations will have a stronger internal and external validity.

Chapter 1: Introduction and Final Evaluation Methodology

11. This evaluation analyses the relevance of the work performed by the Group of Experts (GoE) on coal mine methane (CMM) contributing to the implementation of the United Nations Economic Commission of Europe (UNECE) sub-programme on sustainable energy; it also assesses the efficiency, effectiveness and the sustainability of the UNECE's activities creating the case studies on the application of best practice guidance for CMM.

12. The main objective of the activities was to contribute to strengthen capacities of participating countries to implement best practices in CMM management. The project aimed at increasing the knowledge level on the issue of coal mine methane, and to promote mine workers' safety and the reduction of greenhouse gas emissions from coal mines through activities that may help the recovery and use of methane.

13. The methodology for this evaluation is based on the Terms of Reference provided by UNECE (Annex 1), the UNECE Evaluation Policy¹ and the UNEG Standards for Evaluation in the UN System comprising the afferent Code of Conduct and the Ethical Guidelines. Gender and human rights aspects were also covered

¹ https://www.unece.org/fileadmin/DAM/press/pr2014/UNECE_Evaluation_Policy_October_2014.pdf

by the evaluation to the relevant extent, taking into account guidance provided by the United Nations Evaluation Group on the matter².

14. The evaluation consisted of a desk review of relevant documents (Mandate and Terms of Reference of the GoE on CMM, Work Plans and Annual Reports, Case Studies, workshop materials, the Terms of Reference and Work Plan of the International Centres of Excellence (ICE), and other materials available for online consultation. Two online-questionnaires³ with feed-back from members of the GoE CMM and beneficiaries of trainings were also created. However, the low response rate to the questionnaire likely the result of organisational culture or low understanding of evaluation process, makes the responses bear weak statistical relevance. Semi-structured interviews were conducted with people involved in the project management from UNECE in Geneva, as well as with some members of the Group of Experts.

15. After collecting the data, the analysis involved a qualitative analysis software – MaxQDA - sorting the information according to the evaluating questions. The next step identified the intervention logic, and tried to establish causalities between intervention components and the achieved results, according to theory based evaluation principles (and experimentally using elements of the Process Tracing methodology) (Process Tracing offers a rigorous method appropriate for *ex post* evaluations, without the requirement for baseline or counterfactual data).

16. The evaluator synthesized the results of analysis and supplementary materials in a policy-oriented synthesis report, systematically covering the evaluation purpose, the agreed questions, and the specified criteria (relevance, effectiveness, efficiency and sustainability), to produce valid and credible conclusions and recommendations. The recommendations should be used by the Sustainable Energy Division to improve the planning and implementation of projects, to maximize the impact of its work and to set further direction of work for the GoE CMM. To ensure quality of the evaluation process and report, the evaluator used a quality assessment grid comprising six quality principles and 21 quality checking questions.

17. The duration of the evaluation was of 25 working days during the period from 10th of April – 16th of October 2017. The evaluation activity has been performed by an independent evaluator⁴ with socio-economic background, having expertise in implementation, monitoring and evaluation of international development projects (including with the UNECE), and experience with policy design and capacity building related projects in UNECE member States.

18. In the evaluating process, the evaluation criteria to be assessed according to the Terms of Reference (Relevance, Efficiency, Effectiveness and Sustainability) received one of the following ratings: “*Excellent – Fully Satisfactory – Partly Satisfactory - Partly Unsatisfactory – or Unsatisfactory*”.

Chapter 2: Background information

19. The relevance of the coal mine methane derives from the importance of safety in the coal mining industry and the current awareness of the effects that methane and other greenhouse gas emissions have on the Earth’s atmosphere and climate change.

² Available at <http://www.uneval.org/document/detail/980> and <http://www.uneval.org/document/detail/1452>

³ Available at <https://kwiksurveys.com/s/5YCTjntP> and <https://kwiksurveys.com/s/dzXRTvSg>

⁴ The independent evaluation was conducted by Mr. Marius Birsan, and was carried out in close cooperation with the UNECE Programme Management Unit

20. The energy demand grew constantly together with the global economy. As coal is the second energy source currently, the worldwide coal production is forecasted to increase steadily during the following years. Today, coal supplies around 30% of global primary energy and 40% of global electricity (Source: International Energy Agency). The rapid demand increase exerts pressure on coal mines operators to accelerate their production - sometimes to levels beyond safety and sustainability, potentially leading to undesired effects (including accidents).

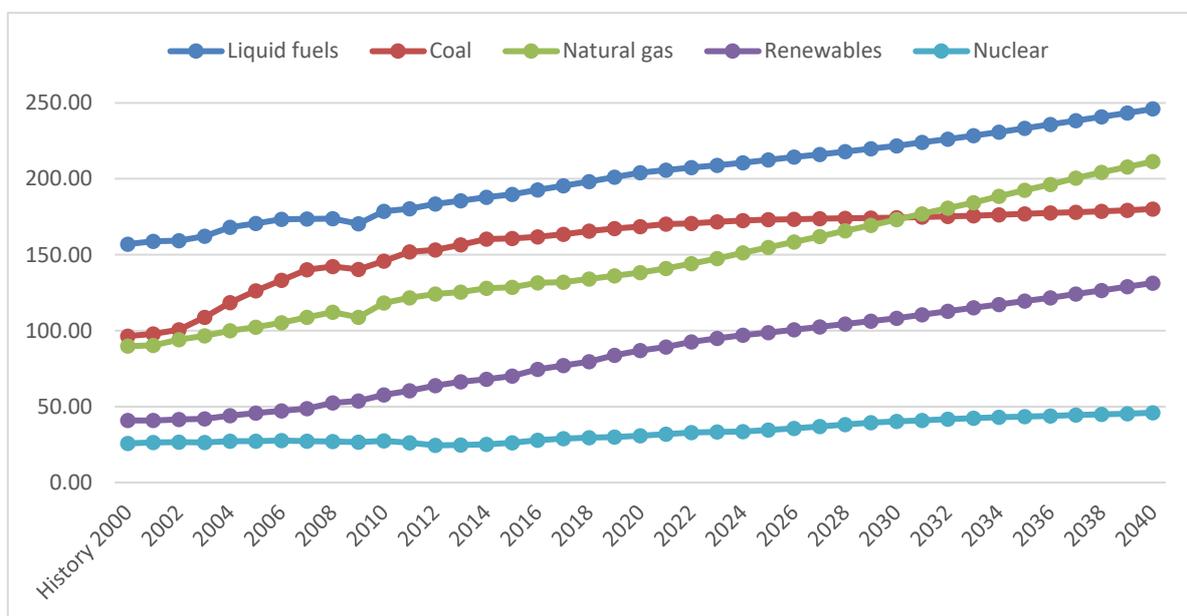


Fig. 1: World energy consumption by energy source, 2000-2040 (quadrillion Btu). Source: US Energy Information Administration (www.eia.gov/outlooks/ieo/world.php), June 2017

21. Even if the number of accidents caused by coal mine methane is not high, the impact is significant with material damages and – most importantly – with thousands of injuries and numerous life losses each year. According to the UNECE “Best Practice Guidance”⁵, between 2010 and 2016 there were almost 700 fatalities registered in seven accidents in eight countries.

22. Another factor making methane an important gas is its contribution to the global warming. Coal mines are a significant emissions source of methane, a potent greenhouse gas (GHG) with a global warming potential 28-34 times higher than that of carbon dioxide over a period of 100 years⁶. Methane totals 20% of global anthropogenic GHG emissions and coal mines release 8% of global anthropogenic methane emissions.⁷ Preventing the free release of methane contributes to lowering the methane concentration in the atmosphere, while capturing the gas and using it in economic processes increases the profitability of the coal mines.

23. Experts agree that reducing methane emissions could help to slow down the rise in global temperatures. However, globally there is no clear and complete picture on the amount of methane being released. Not all companies measure and report leakages. Methane emissions from coal, oil and natural gas production are substantial and occur at various stages along the value chain of each of these industries.

⁵ <http://www.unece.org/index.php?id=44133>

⁶ IPCC 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. (ILO).

⁷ https://www.globalmethane.org/documents/coal_fs_eng.pdf

24. In this context, the UNECE Sustainable Energy Division set forth a process to raise awareness of coal mine methane. The Division mobilized resources to address the CMM issue through setting up a GoE on CMM and by bringing together qualified expertise in this field to support the UNECE member States' governments in their efforts to minimize CMM-related risks.

Chapter 3: Project Design vs. Relevance

25. According to the Programme of Work of the Sustainable Energy sub-programme (endorsed by the Executive Committee of UNECE), the UNECE's Sustainable Energy Division aims at "improving access to affordable and clean energy for all and help reduce greenhouse gas emissions and the carbon footprint of the energy sector in the region". Its areas of work include cleaner energy production, methane management and coal mine methane, energy efficiency, natural gas, renewable energy and UN Framework Classification of energy and mineral reserves and resources.

26. The idea to focus on coal mine methane was for the first time introduced at the sixth session of the Ad Hoc Group of Experts on Coal in Sustainable Development (November 2003), when the Group addressed the subject of CMM. The Ad-Hoc Group created two background papers (ENERGY/GE.1/2003/4 and ENERGY/GE.1/2003/5) and delivered during the session several presentations on the topic. As a result, the secretariat proposed the establishment of the Ad Hoc Group of Experts focusing on Coal Mine Methane. The Ad Hoc Group of Experts on CMM was established at the 14th Session of UNECE's Committee on Sustainable Energy in 2005. The experience acquired with a similar Group of Experts (on Public-Private-Partnerships) within UNECE Economic Cooperation and Integration Division has been cross-used.

27. Following information gathering, data analysis and consultations among the experts and with the Sustainable Energy Division, the GoE on CMM released under the auspices of UNECE in 2010 the first edition of the "Best Practices Guidance", a collection of principles, norms and standards on CMM capture and use, to act as a basis for informed policy making and commercial decisions, in order to achieve zero fatalities and explosions while minimising the environmental impact of CMM emissions.

28. According to the Mandate and Terms of Reference adopted by the Executive Committee in March 2014, the GoE on CMM has as its objective "to promote the reduction of greenhouse gas emissions from coal mines by means of activities that may help the recovery and use of methane in order to reduce the risks of explosions in coal mines", to be achieved through "best practice guidance for effective drainage, recovery and usage of coal mine methane". (Annex II, p.11).

29. The planned activities were addressing profitable recovery and use of coal mine methane and abandoned mine methane, considering the related pillars of sustainable development: economic (by generating revenues and cost savings), social (improving mine safety and productivity), and environmental aspects (by recovering and using CMM otherwise emitted in the atmosphere). With these three areas of focus, the results of the work of the GoE on CMM also contribute to the objectives of sustainable development. Even though at the time of starting the initiative the Sustainable Development Goals (SDGs) were not yet formally agreed, the project addresses issues under SDG 7 (affordable and

clean energy), SDG 8 (decent work and economic growth), SDG 9 (industry, innovation and infrastructure) and SDG 13 (climate action).

30. As compared to the times when the GoE was established, nowadays the institutionalization of the SDGs increases the relevance of the Group's work and the achieved results, and provides more opportunities for collaboration with other international institutions (ILO, ISO, and UNFCCC). This also creates a potential for expanding the Group's reach and the area of applicability of practices that the Group promotes to UNECE non-member States (either directly or through the self-financing Centres of Excellence).

31. Furthermore, the United Nations General Assembly declared the decade 2014-2024 as the "Decade of Sustainable Energy for All", stressing the criticality of energy issues for sustainable development. The rationale behind it is to "combine the increased use of new and renewable energy resources, more efficient use of energy, greater reliance on advanced energy technologies, including cleaner fossil fuel technologies, and the sustainable use of traditional energy resources, to meet the increasing need for energy services"⁸.

32. As a response to the GoE's work, UNECE non-member States showed explicit interest either to use the knowledge (to contribute to creation of a legal framework related to coal mine methane – e.g. Colombia) or even to host an International Centre of Excellence (China), adding to the relevancy dimension of the activities.

33. If in result of the work undertaken by GoE on CMM the UNECE member States successfully implement the recommendations and best practices developed by the Group, efficient capturing and use of methane will also contribute to attaining aims of the Paris Agreement on Climate Change (lowering the increase in the global average temperature and making finance flows consistent with a pathway towards low greenhouse gas emissions).⁹

34. Facts and Key Outputs of the project:

- The increasing global energy demand puts pressure on the coal industry to raise the production, sometimes at the expense of safety;
- In spite of increased safety measures in mines, the explosions caused by methane accumulated in mines are still relatively frequent, causing casualties and material loss;
- A Best Practice Guidance (2010) was released in English language, containing examples of mitigating risks; country representatives requested the BPG to be translated in several languages; the request was followed and the BPG was translated into French, Russian, Chinese, Spanish, Mongolian, Bosnian/Croatian/Serbian)
- The activities carried out by the GoE on CMM respond directly to UNECE's Committee on Sustainable Energy (as outlined in its Terms of Reference) and address global concerns related to safety, environmental protection and climate change mitigation (as defined under the SDGs);
- The knowledge generated by the GoE on CMM is intended to be used in the ICEs, contributing to increasing capacity at academia and professional level, and to improve the legal framework related to the mining industry (in the region and beyond);

⁸ http://www.se4all.org/decade_about

⁹ www.unfccc.int/paris_agreement/items/9485.php

- In the online questionnaire (Annex 4), when asked about relevancy of the Group’s work to the mandate of the Sustainable Energy Division of UNECE, 71% of the respondents agreed that it is “very relevant”, and 57% had the same opinion about the relevancy of the work for the governments of the UNECE member States.

35. Considering all the above facts (the proven need to address safety concerns and to mitigate methane effects on the environment, the alignment with the objectives of the Sustainable Energy Division, the support requested by UNECE member States and the contribution to four of the Sustainable Development Goals), the project’s relevance is rated *excellent*.

Chapter 4: Project Implementation – Effectiveness and Efficiency

Project Implementation vs. Effectiveness

36. The declared objective of the GoE was to develop, update and disseminate the Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines. During the two work plans approved by the Committee for the GoE (2014 – 2015, and 2016 – 2017), a set of seven activities were planned to be implemented (as outlined in the below Table 1 (“Intended Outputs vs. Actual Outputs and Outcomes”). Currently the Mandate of the GoE lasts until end of 2017.

- Electronic dissemination of Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines: in 2010 the first edition of the Best Practice Guide (BPG) was edited in English, comprising recommended principles and standards on CMM capture and use, providing decision-makers with technical understanding and acting as a source of guidance for senior managers and policy makers. The principles outlined in the Best Practice Guidance were illustrated by a number of case studies organized, for comparison purposes, in a common framework (Initial Conditions—Gas Control Problems—Solution). In 2014 and 2015, the BPG has been translated into additional languages (Spanish, Mongolian, and Bosnian/Croatian/Serbian); the GoE proposed further translation in Korean, Turkish, Romanian and Polish.
The updated BPG (see point b. below) has been printed and its’ principles disseminated to government and mining companies’ representatives during such events organized by the GoE on CMM as three workshops (Kazakhstan – Dec 2016; India - March 2017, Poland - June 2017), during the GMI Global Methane Forum (March 2016) and during the 8th International Forum on Energy for Sustainable Development (June 2017); international, regional and local experts presented various aspects of methane management, such as pre- and post-mining drainage, explosion prevention, and methane utilization;
- Update, further development and dissemination of Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines: the 2010 edition of the BPG has been updated covering the latest developments in the relevant industries. The revised draft was circulated to the Stakeholder Group for its final review and comment in December 2015;
- Prepare proposals for case studies, where appropriate financed by extra budgetary resources, on the application of best practice guidance in specific coal mines in different regions of the world: in January 2016, a new project commenced - “Trust fund for dissemination of best practices in

the emission abatement, recovery, and use of coal mine methane”, funded from extra-budgetary source (United States Environmental Protection Agency);

- d. Collect and disseminate case studies on the application of best practice guidance in specific coal mines in different regions of the world: 19 case-studies across the world have been synthesised and posted on the UNECE webs-site, with the aim to be used by technical staff and policy makers in the UNECE member States;
- e. Facilitate establishment of International Centre of Excellence on Coal Mine Methane (2014-15) resp. launch and support the work of the International Centre of Excellence on Coal Mine Methane (2016-17): the first ICE has been launched in June 2017 in Poland, and the draft version of the work plan is in discussion at the time of evaluation. It is to be presented and submitted for the Group’s review and approval at the annual meeting of GoE on CMM in October 2017. The MoU for the second ICE in China has been signed in May 2017. The opening of the Centre is scheduled for mid-September 2017. The host and the secretariat are finalizing organization of the event. A Task Force continues to look into the possibility to expand the geographic and substantive scope of future International Centres of Excellence on CMM. The ICEs on CMM should be specialized centres, tasked to support capacity-building activities and dissemination of best practices in safe mining activities, economically viable methane abatement and utilization, and environmentally responsible methane management;
- f. Continue to provide advice to UNFCCC (on the matters related to ACM0008), the International Organization for Standardization (ISO) and to other international, national and regional market-based coal mine methane emission reduction mechanisms and coal mine methane related standards: collaboration agreements and work together with Global Methane Initiative's Coal Sub-committee, the UNFCCC secretariat, ILO, ISO’s Technical Committee 263 have been set-up and implemented;
- g. Expand the Group of Experts’ scope of work to cover integrated methane management in the context of sustainable development: under this objective, UNECE published a paper on transformation of the coal industry: "The Challenges of the US Coal Industry and Lessons for Europe". In collaboration with other Groups of Experts operating under the umbrella of the Committee on Sustainable Energy, the Group of Experts on CMM initiated a cross-cutting project on the transformation of the energy sector, a relevant approach given the ever increasing importance of the energy sector. Within the scope of its expertise, the GoE also participates in the work on Methane Management in the Extractive Industries.

37. Development of case studies leads to collection and dissemination of relevant experience. Information exchange during workshops (in the future with support from the ICEs) should contribute, in turn, to strengthening technical national capacity of participating countries by increasing the specialists’ and policy makers’ expertize level. In parallel, the political dialogue facilitates the upgrading of the legal frameworks (social and environmental) for enhancing coal mine methane management and improves coal mine safety.

38. With the technical part of this set of activities, the GoE contributes to the promotion of the latest improved technologies for CMM extraction in working and abandoned coal mines. The GoE is aware that the newest IT Technologies might enhance the work through employment of software, e.g. for predicting and mitigating the risks from hazardous methane outbursts or to simulate optimum efficiency and application. This technical part is complemented by the political dimension provided by the UNECE Secretariat, which is a well-established platform for inter-governmental dialogue. The political dialogue

analyses the technical priorities versus social and environmental priorities, and acts as a basis for discussion on legislative proposals. This combination (technical – political) proves to be an appropriate combination to drive change in UNECE member States (a similar approach was successfully employed by the Group of Experts on Public-Private-Partnership, a project evaluated by the same evaluator in 2016¹⁰). An additional finding potentially enhancing the effectiveness derives from the mentioned evaluation, and refers to employing an “idea champion” to advocate for the policy changes in member States (see Recommendation 3, Paragraph 71);

39. The relevance of the work is underlined by the requests and/or offers from UNECE member and non-member States to adapt and translate various materials in other languages. Besides case studies and the Best Practice Guidance, meeting documents such as provisional annotated agendas and work plans prepared by GoE and the secretariat are always translated into French and Russian and posted on the UNECE website.

40. The logical results chain of the GoE’s work can be seen as organically evolutionary: creating knowledge through the internal expertise and by cooperating with other specialized structures; then synthesizing the knowledge in the BPG; stimulating the creation of Case Studies and centralizing the information; disseminating the knowledge (electronic, in print, and through conferences and workshops); and facilitating the creation of ICEs as recognized depository of relevant knowledge.

41. Even if not explicitly stated, the activities and the corresponding outputs create results at outcome level, following a logical chain: the safety measures should decrease the number of explosions and of the casualties; the envisaged methane collection and industrial utilization should decrease the level of freely released methane, thus limiting its concentration in the atmosphere (environmental protection) and generating additional revenues (economic and social benefits).

42. In the November 2015 activity report it is stated that GoE is “... results-oriented. Delivers concrete outputs. Non-duplicative.” This statement is supported by the underlying activities and results, especially in the results-oriented approach in the UN System. However, diverging from the Results-Based-Management principles, the activities and their results did not have corresponding indicators and baseline information that would have made the results more quantifiable for the purpose of the present evaluation and ensure external validity of the assessment. This approach has a plausible reasoning at the outcomes level, as measuring these indicators currently has strong limitations. The accidents and casualties reporting is not uniform across the world, and the credibility is not always ensured. In a similar vein, quantities of methane released in the atmosphere from coal mines are in many cases not properly measured. It is advisable for the internal documentation of the Division to include a stronger Results Based Management approach when creating project documents and reports, in order to make the results easily understandable to stakeholders, thus increasing credibility.

43. In 2011, the Economic and Social Council of the UN (ECOSOC) invited the United Nations Member States, international organizations and the regional commissions to take appropriate measures to ensure the application of the Best Practice Guidance in countries worldwide (ECOSOC Decision 2011/222). It is difficult to assess now the achievement of this goal, as no reporting mechanism and no quantifiable indicators have been established.

¹⁰ Evaluation of the UNECE project "Capacity Development to support the implementation of Public-Private Partnership (PPP) in Belarus - [link](#)

44. Facts and Key Outputs of the project:

- The activities and the corresponding outputs have been implemented according to the plan and the objectives of the seven activities have been achieved, but the logical link/Theory of Change to the expected outcomes and their impact is only implied; no benchmarks have been established, the indicators have not been monitored and the potential results at outcome/impact level are not measured. The results could be made more accessible and credible to stakeholders by employing the Results Based Management principles;
- The activities had a sound logic of collecting, generating and disseminating knowledge, critical for capacity building. By collecting and consolidating the best practices and producing the case studies, then by organizing dissemination events, GoE enabled access to information for national decision factors within the member States. Specialists and policy makers have now access to and have been exposed to information related to understanding of the initial conditions, opportunities and challenges in methane management. However, the way national capacities internalized the knowledge and how they deploy new knowledge is not followed on, and this should be addressed by a new organizational culture of results measurement within UNECE;
- The technical component of the activities (GoE) have been complemented by the political dialogue platform facilitated by UNECE, following an established working model. The long-lasting effects of these activities at policy level within member States have not been monitored

45. The activities have been implemented delivering the planned outputs, with the expected level of quality and timeliness, but the logical chain between outputs, outcomes and impacts has not been fully defined. Performance indicators are not set and outcome results are not measured. Accordingly, the assessment of outcome level results can only generate assumptions about the effectiveness of the activities set, and the general rating is *Partly Satisfactory*.



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Intended Outputs vs. Actual Outputs and Outcomes Table

Intended Outcomes	Planned Activities	Planned Outputs and Timeline	Actual Outputs	Comments on Actual Outputs
<p>Electronic dissemination of Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines</p>	<p style="text-align: center;">2014-2015</p> <ul style="list-style-type: none"> - The secretariat and the Bureau of the Group of Experts identify professional translators to translate the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines into Spanish and Mongolian, as well as Vietnamese, Korean and Bosnian/Croatian/Serbian (depending on the availability of funds); - The secretariat and the Bureau of the Group of Experts establish technically qualified national peer review bodies to compare the translations with the English original to verify their technical accuracy and linguistic quality; - The secretariat and the Bureau of the Group of Experts agree the final drafts through an interactive electronic exchange among the Group of Experts; and - The secretariat and the Bureau of the Group of Experts publish and disseminate translated versions electronically. <p style="text-align: center;">2016-2017</p> <ul style="list-style-type: none"> - Carry out and report on fact-finding missions in critical coal mining regions. - Plan, organize, and execute demand-driven capacity-building workshops, in accordance with the work plan and the budget of the relevant extra budgetary project; - Continue the collaboration with the Global Methane Initiative (GMI), including through participation in the GMI Global Methane Forum planned for March 2016; 	<ul style="list-style-type: none"> - Best Practice Guidance on Effective Methane Drainage and Use in Coal Mines in <ul style="list-style-type: none"> - Spanish (approved version November 2014, electronically published January 2015) - Mongolian (approved version January 2015, electronically published April 2015) - Vietnamese (approved version April 2015, electronically published June 2015) - Korean (approved version June 2015, electronically published September 2015) -Bosnian/Croatian/Serbian (approved version September 2015, electronically published November 2015) -Two to three demand-driven workshops on practical application of best practices in various coal mining regions, targeted at coal mining professionals and policy makers dealing with sustainable use of coal 	<ul style="list-style-type: none"> -peer reviewed in Oct 2014; published online in Jan 2015 -peer reviewed in Oct/Nov 2014 – Jan 2015; published online in June 2015 -B/C/S peer reviewed in Oct 2014; published online in Jan 2015 - Workshop “Best practices in Coal Methane Management and Coal Gasification Technologies” was held in Kazakhstan (Dec2016 - organized in partnership with the UNDP country office and Ministry of Energy. A survey to identify challenges in methane management in Karaganda coal mines has 	<p>Achieved (partially ahead of schedule for the 2014-2015 WP). This made the GoE to propose and start work on additional languages for translation: Korean, Romanian, Turkish, Vietnamese and Polish</p> <p>BPG is planned to be used as a reference in drafting regulations and legislation on methane management and safe mining practices in Colombia.</p> <p>Capacity building workshops aim to</p>

	<ul style="list-style-type: none"> - Explore how to further expand and deepen the collaboration with GMI in the context of the Committee of Sustainable Energy and in collaboration with other Groups of Experts in ECE. 	<ul style="list-style-type: none"> mine and methane (by Dec 2017); - Participation in the GMI Global Methane Forum in March 2016; - A new framework for collaboration between relevant ECE Groups of Experts and the Global Methane Initiative. 	<ul style="list-style-type: none"> been designed and circulated among stakeholders. 37 people attended; - capacity building workshop on “Best Practices in Methane Drainage and Use in Coal Mines” held in India (March 2017- organized in partnership with USEPA, GMI, Coal India and CMPDI); - capacity building workshop on “Best Practices in Coal Mine Methane Drainage and Utilization held in Poland at the opening of ICE CMM (June 2017); - participated in the GMI Global Methane Forum in March 2016; - participated in the 8th International Forum on Energy for Sustainable Development in Astana (June 2017). 	<ul style="list-style-type: none"> contribute both to acquire and to disseminate knowledge on CMM issues.
<p>Update, further development and dissemination of Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines</p>	<ul style="list-style-type: none"> - The secretariat and the Bureau of the Group of Experts establish a task force to examine the content and structure of an updated Best Practice Guidance with a view to identifying themes that need to be addressed in a next edition; - The bureau of the Group of Experts organizes communications among the Task Force to suggest possible changes and additions; - The secretariat and the Bureau of the Group of Experts determine a new structure and content of the Best Practice Guidance to propose to the larger Group of Experts. 	<ul style="list-style-type: none"> - Presentation to the Group of Experts with recommendations on a new content for the Best Practice Guidance (Nov 2014) - A case study on outburst prevention (Jan 2016) - Review and amend as necessary the Best Practice Guidance for Effective Methane Drainage and Recovery in Coal Mines (Jun 2016) 	<ul style="list-style-type: none"> - The task force to examine the content and structure of an updated Best Practice Guidance was established (incl. with support from China) and finalized the review of the draft revised BPG. The revised draft was circulated to the Stakeholder Group for its final review and comment in December 2015; - revised and updated BPG formally launched in Oct 2016, published in Dec 2016 and printed in March 2017; <p>The BPG has been presented during congresses/meetings/workshops.</p>	<p>Achieved.</p>

<p>Prepare proposals for case studies, where appropriate financed by extra budgetary resources, on the application of best practice guidance in specific coal mines in different regions of the world</p>	<ul style="list-style-type: none"> - Demonstrate the application of the best practice guidance by the Group of Experts at an operating coal mine, if accepted, using the funds from Project E187 depending on their availability; - The secretariat and the Bureau of the Group of Experts review the current framework for cases studies and, if needed, propose a new structure; - The secretariat and the Bureau of the Group of Experts reach out to various coal mining institutions and coal mine operators to encourage them to share relevant case studies on the application of best practices; - The secretariat and the Bureau of the Group of Experts review of the case studies by the Group of Experts through an electronic exchange platform and discuss them, as applicable, at the annual sessions planned for 2014 and 2015; - The secretariat publishes case studies on the ECE coal mine methane website after endorsement by the Committee on Sustainable Energy; and - Depending when the funds are made available, implement applicable deliverables of the project E187. 	<p>- A number of case studies on the implementation of best practices in methane management; relevant E187 project deliverables accomplished.</p>	<p>-“Trust fund for dissemination of best practices in the emission abatement, recovery, and use of coal mine methane”, funded by the United States Environmental Protection Agency, approved by EXCOM in June 2015. The project started on 1 Jan 2016;</p> <p>- A case study on applying new technologies for increasing degassing efficiency in Kazakhstan was published on the UNECE website and presented at the Group of Experts’ tenth session;</p> <p>- Revisited the Project E187 (financing unavailable)</p>	<p>Achieved (except for the E187 Project, due to insufficient funding)</p>
<p>Collect and disseminate case studies on the application of best practice guidance in specific coal mines in different regions of the world</p>	<ul style="list-style-type: none"> - In response to the request made at its tenth session, the Group of Experts will solicit and publish on the ECE website a series of case studies on outburst risk, and its detection and prevention. There is an open invitation to members to submit further case studies that complement Best Practice Guidance to this library; - Demonstrate application of the best practice guidance at operating coal mines, if accepted, using extra budgetary funds; - Reach out to various coal mining institutions and coal mine operators to encourage them to share relevant case studies on the application of best practices; - Review case studies through electronic exchanges and discuss them, as applicable, at the annual sessions planned for 2016 and 2017; - Publish case studies on the ECE coal mine methane website. 	<p>-Case studies on implementation of best practices in methane management (continuing activity)</p>	<p>- 19 Case studies reviewed and published (partially from extra budgetary resources);</p>	<p>Achieved (and ongoing).</p>

<p>Facilitate establishment of International Centre of Excellence on Coal Mine Methane</p> <p>//</p> <p>Launch and support the work of the International Centre of Excellence on Coal Mine Methane</p>	<p style="text-align: center;">2014-2015</p> <ul style="list-style-type: none"> - Solicit United Nations Member States to host ICE-CMM; -Determine which country(ies) are interested; - Select suitable candidates to host ICE-CMM; - Enter into procedure on structuring the Memorandum of Understanding needed to establish ICE-CMM. <p style="text-align: center;">2016-2017</p> <ul style="list-style-type: none"> -Develop and draft the work plan of the ICE-CMM, with potential deliverables; - Inaugurate the ICE-CMM; - Once the ICE-CMM is operational, assist the ICE-CMM in carrying out its work, as requested or needed in accordance with the ICE-CMM's Terms of Reference. 	<p>Memorandum of Understanding on ICE-CMM.</p> <p>Decision on the host country (November 2014), Memorandum of Understanding (November 2015).</p> <ul style="list-style-type: none"> - Initial draft work plan with potential deliverables (Feb. 2016) - Inaugural conference/workshop at the host organisation, combined with appropriate public relation activities (Sept 2016) - Status reports on the activities of the ICE-CMM (Reports: June 2016, Nov 2016, Nov 2017) 	<ul style="list-style-type: none"> - Task Force established; - ICE CMM Terms of Reference drafted; the Central Mining Institute in Katowice, Poland expressed interest on hosting ICE; MoU agreed in May 2015 and signed in Oct 2015; ICE CMM was launched in June 2017; - discussion started with Chinese partners to establish a second ICE CMM; MoU signed in May 2017, prospective launch in Sept 2017; - draft work plan for ICE CMM in Poland created; to be presented to the Group in October 2017 - Task Force to look into the possibility to expand the geographic and substantive scope of future ICE CMM; 	<p>Achieved (and ongoing).</p>
<p>Continue to provide advice to UNFCCC (on the matters related to ACM0008), the International Organization for Standardization (ISO) and to other international, national and regional market-based coal mine methane emission reduction</p>	<ul style="list-style-type: none"> - Continue to liaise with the above-mentioned and similar organizations. - Explore the opportunity to meet with UNFCCC and ISO. 	<p>Report on coal mine methane management, inventories and standards.</p> <p>Timeline: Through November 2015.</p> <p>Continue to liaise with the above-mentioned and similar organizations and actively solicit the Group of Experts' advice and services (on the need basis)</p>	<ul style="list-style-type: none"> - Multi-year collaboration with the Global Methane Initiative's Coal Sub-committee and the UNFCCC secretariat. - ILO stated that GoE CMM work plan 2014–2015 complements the ILO's work, both in relation to mining and in the creation of green jobs. An ILO representative serves as a member of the Bureau of the Group of Experts; - constant monitoring of developments in CMM-related standards performed; - established working relationships with the ISO's Technical Committee 263; in Dec 2015, 	<p>Achieved (and ongoing).</p>

<p>mechanisms and coal mine methane related standards</p>			<p>UNECE submitted a formal request to become a Category A liaison member of ISO/TC 263;</p> <p>- Continued work with GMI on joint activities in 2016, including through liaising with other GMI sub-committees, in particular on UNECE participation in the Global Methane Forum.</p>	
<p>Expand the Group of Experts' scope of work to cover integrated methane management in the context of sustainable development</p>	<p>-Look into other economic, environmental and social aspects on coal mine methane, with a view to treating coal mine methane management in the context of sustainable development, green economy and green job creation;</p> <p>- Develop recommendations on the enabling role of coal mine methane projects in restructuring the coal mining industry in the ECE region through adopting new business models that facilitate the transition from a single community producer to an integrated energy company.</p>	<p>-Contribution to the Committee on Sustainable Energy's report on methane management in extractive industries (Nov 2016);</p> <p>- Recommendations on the enabling role of coal mine methane projects in restructuring the coal mining industry in the ECE region (Oct 2017)</p>	<p>- Paper on transformation of the coal industry was prepared by Columbia University students under UNECE guidance: "The Challenges of the US Coal Industry and Lessons for Europe". The paper was published on the UNECE website in Dec 2016;</p> <p>- In collaboration with other Groups of Experts operating under the umbrella of the Committee on Sustainable Energy, the Group of Experts on CMM initiated a cross-cutting project on the transformation of the energy sector.</p> <p>Within the scope of its expertise the Group also participates in the work on Methane Management in the Extractive Industries</p>	<p>Achieved (and ongoing).</p>

Table 1: Intended Outputs vs. Actual Outputs and Outcomes



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Project Implementation vs. Efficiency

46. The guiding idea for the activities was to gather internationally recognized experts and involve them collectively into the debate on best alternatives for addressing CMM-related issues. The members of the GoE on CMM, with support from the UNECE Secretariat, implemented activities and achieved results as agreed in the Work Plan 2014 – 2015, and are currently in the process of implementing the activities in accordance with the Work Plan 2016 – 2017.

47. The planned activities have been implemented in due time, according to the schedule. Some components have been achieved in advance (the translation of the BPG in additional languages), making the GoE to consider expanding the range of languages for translation. Activities involving external partners (establishing ICEs, conferences or workshops) were implemented timely or with minimal delays. The quarterly reports covering the above-mentioned periods also included a paragraph on (potential) challenges to be overcome, so the risk management has been considered.

48. The financial resources have been adequate, in spite of some intermediary activities hindered by lack of financing (e.g. identifying the needed funds to rewrite chapters of the BPG, or revising of the Project E187); the free in-kind contribution of the members of the GoE increased the efficiency, especially considering the quality of the work and knowledge generated. Part of the current work of the GoE is financed by an external donor; for the future work of the GoE, however, the financing is only partly secured from the UNECE's regular budget, and most of the activities will have to be covered by the extra-budgetary arrangements, making the financing less predictable.

49. Both the quarterly reports and the interviews revealed a constant and ongoing personnel issue within the Secretariat. Given the amount of work and – especially – the geographical dispersion of the members of the GoE, the role that the Secretariat plays (through the designated Programme Officer) is critical. In reality, the Secretariat had to rely intermittently on two staff. This generated discontinuity in work, less predictability and increased the workload, especially during the times when the position was vacant (“... the work in this field is currently carried out through redistribution of tasks among existing staff members. In the 2nd quarter of 2014 none of these resources were available and the work has been picked up by other staff in the Division” (quarterly report Q2 - 2014). As a result of the staff shortage, even relatively important tasks (the first draft of the BPG translation into a new language) has been implemented with the support of interns. Qualified opinion estimates that one full time Programme Officer should be exclusively dedicated to perform tasks supporting the GoE.

50. The promotion of the GoE from an “Ad-Hoc” Group to a permanent subsidiary body of the Committee on Sustainable Energy improved predictability of activities' funding, and situations like with project E-187 (suffering from several delays due to lacking financing, as extra-budgetary resources couldn't be mobilized) disappeared following the introduction of the regular budget.

51. As the members of the GoE contribute in-kind with their work, the work-cost ratio in this situation is excellent, contributing to increasing the funds usage efficiency. This approach of mobilizing the recognized technical expertise free of cost is employed by UNECE across several groups of experts, and

proves to be highly cost-efficient. Additionally, the technical expertise provided by experts complements the policy enabling dialogue facilitated by UNECE.

52. In order to increase the efficiency of its work and to complete substantive and administrative discussions, the GoE recommended to increase the duration of meetings of the Group from one to one and a half or two days, and to schedule the meetings during the same week as the annual Committee on Sustainable Energy meeting. The rationale behind the later request was that it is important for the members of the GoE to have an opportunity to attend meetings of the Committee on Sustainable Energy. In particular, the presence of the Chair of the Group was highlighted as necessary, as he is a member *ex officio* of the Extended Bureau of the Committee. In light of such arguments, EXCOM approved the prolongation of the working sessions, providing adequate time frame for discussions and drafting materials.

53. The straightforwardness of the activities (updating and translating the BPG, disseminating knowledge through workshops, collaboration with similar institutions) makes the approach to be unique, not providing other cost-effective alternatives. The existing approach is efficient as long as appropriate resources are provided. Besides financial resources necessary for project staff or implementing activities, this refers also to experts invited to participate to GoE meetings or workshops. The expert's work in the GoE is on voluntary basis, and financial support from UNECE is important to facilitate their participation and contribution.

54. Facts and Key Outputs of the project:

- The activities have been implemented in due time, according to the plan (except for the E-187 Project) and achieved the results as intended;
- The financial resources were mostly adequate, (except for the case of Project E-187), but the current situation is less predictable (relying more on extra-budgetary resources);
- The personnel resources were insufficient within the Sustainable Energy Division; this caused work overload and increased efforts to compensate the missing capacities in administrative support;
- The implementation model (involving free contribution from experts, and the in-kind contribution of UNECE member States) ensured a highly efficient usage of the resources;

55. Having achieved timely results, with adequate financing (except for the E-187 project), high cost-efficiency in implementing activities, but suffering from personnel understaffing within the Division, the activities prove to be *Partly Satisfactory*.

Chapter 5: Sustainability

56. The GoE's Terms of Reference and annual Work Plans embedded the sustainability element at several levels: creating a knowledge base captured in the BPG, increasing capacities by training people, and creating the ICES. No formal risk analysis framework was created.

57. The most important result of the GoE's work is the amount and quality of the technical work, as well as collecting and refining information from across the world. Given the current transformation

towards the information-based society, this knowledge depository constitutes a key element for sustainability. It is critical to understand how the other components concur to enhance the usability of results:

- The appropriateness of dissemination channels. The BPG, the Case Studies and other information materials are posted in the UNECE web-site, have been printed and distributed to interested specialists and policy makers during congresses and workshops organized by UNECE or in collaboration with other partners. Ideally, the Best Practice principles and recommendations would be formalized in the UNECE member States, either through governmental structures or at academic level, but information on this outcome is not systematically recorded. Also, some national entity should have monitored the evolution of the implementation and the end results – decrease of accidents and casualties, and the ecological effects;
- UNECE member States' government's availability and capacity to implement recommendations. Several activities have been requested by the governments, and it is expected that this interest will continue. There is one mention of a country (Colombia) which intends to use the BPG as a reference in drafting regulations and legislation on methane management and safe mining practices. There is no other official record about other countries implementing recommendations from the BPG. The online questionnaire (Annex 4) poses a relevant question, and the responding experts mentioned several countries (Australia, China, France, Germany, Kazakhstan, Mexico, Poland, Russia, Ukraine and United Kingdom,) and Universities in Australia, China, and Turkey who took in consideration these recommendations, but with an unknown degree of integration;
- The effectiveness of the ICEs. The Centres are established as specialised self-financing centres tasked to support capacity-building activities in its field of work. In the draft-work plan of the first Centre in Poland, the main tasks to be accomplished are the translation into Polish language of the BPG, collection of Case Studies on implementation of best practice recommendations, organization of two seminars and two workshops. This is a strong indicator for the ownership of results from a UNECE member State, and the approach will be extended once the ICE in China will be operational. In this situation, it will be critical to synchronize the activities with the other ICEs and GoE CMM, in order to avoid duplication of work. A larger network of ICEs will ensure the long-term sustainability of the work already completed;
- Engagement with technical community, policy makers in UNECE member States, other UN System organizations, financial markets, NGOs. It is important to bring all stakeholders, including private sector, to dialogue, to establish common action frameworks and to create the legal frameworks within the UNECE member States.

58. Another factor contributing to the project's sustainability is the media-based training module financed by the United States' Environmental Protection Agency (EPA), enabling users to manage a self-paced learning process and easy to be used across the world. However, additional work on methane-related challenges and opportunities in the extractive industries cannot be funded from the regular budget due to limited funds available, and they pend subject to availability of extra-budgetary resources, weakening the sustainability. The partnership with EPA brings a dual benefit, as the experts can collect information from a huge coal market.

59. The current trend is that traditional mining companies are transitioning to integrated energy companies and services providers. They are declaratively interested in the impact on energy for sustainable development. This trend makes the knowledge generated by the GoE to become even more relevant in the future, as recently shown by the case of China and its request to UNECE for its support on expanding the country's knowledge on coal mine methane.

60. Facts and Key Outputs of the project:

- From the outset (Terms of Reference and Work Plans) the Sustainable Energy Division and the GoE considered the appropriate factors to increase the sustainability of results;
- The appropriate dissemination channels have been employed, and the knowledge reached the targeted technical and policy-making audience. However, there is no monitoring system to understand the mid- and long-term effects of how this information has been used;
- With extra-budgetary support, a media-based training program has been established, facilitating the knowledge transfer to potential beneficiaries;
- The first ICE has been launched, and for the second one the Memorandum of Understanding has been signed. As the ICE network expands, facilitating the collection, analysis and dissemination of knowledge, the sustainability will be increased;
- A question mark still characterizes the willingness of the UNECE member States' governments to formalize the recommendations made by the GoE through the BPG. However, as this step is beyond the reach of the evaluated project, this statement does not influence the sustainability rating.

61. As the activities focused on collecting, structuring and dissemination of knowledge, the inherent capacity building already is an element of sustainability. With the prospects of expanding the ICE network, the project has an *excellent* sustainability rating.

Chapter 6: Gender Equality and Human Rights

62. The GoE's activities generated knowledge and offered technical assistance in a highly specialized area, and it does not have a direct impact on the final beneficiaries from the gender equality perspective: ultimately, all society at large would benefit from the long-term impact of the project. Also, being a highly technical and traditionally male dominated area of expertise, it wouldn't have been appropriate to include in the activities' design (componence of the GoE, share of participants in the workshops) provisions on gender equality.

63. On the human rights dimension, again the technical characteristic of the project made the involvement of right holders irrelevant at this stage. However, it is implied that reducing methane explosions creates a safer work environment for the miners, contributing to strengthening their right to decent work (SDG 8). The collaboration with the ILO enhances the relevance of human rights consideration, as ILO's mission aims at improving labour standards and promoting proper working environment for all women and men.

64. An important mechanisms to involve the rights holders is to have proper dialogue and consultations during the environmental and social impact assessments, part of the due-diligence process for designing or enhancing existing mining activities.

Chapter 7: Conclusions and Recommendations

65. The activities have been concentrated around the group of experts with high technical expertise, who – with support from the UNECE’s Sustainable Energy Division – collected, synthesized and disseminated knowledge on promoting the reduction of greenhouse gas emissions from coal mines by recovery and use of methane, in order to reduce the risks of explosions in coal mines.

The knowledge has been structured in the Best Practice Guidance (the initial edition and the updated version) and translated into several languages. Additionally, 19 Case Studies (sharing a common framework for comparability: Initial Conditions > Gas Control Problems > Solution) have been produced. A series of workshops and trainings have been organized. The first International Centre of Excellence has been established, and the second one is to follow shortly.

66. The project has an excellent relevance addressing four of the Sustainable Development Goals and trying to solve problems with social, economic and environmental impacts. With sufficient regular budget resources, but growing more dependent on extra-budgetary resources, the results have been largely achieved with high personnel efforts, generating a partly satisfactory efficiency. The planned results have been achieved at their outputs level, but the logical chain towards the intended outcome and impact levels is weak, and results indicators are not being monitored (partly satisfactory effectiveness).

67. Being a capacity building set of activities, the sustainability is excellent given the UNECE member States are being stimulated to adopt the technical regulations and recommendations in their national frameworks. If the ICEs will grow to become a larger network of knowledge centres, they will become a standalone product of this project. With the above ratings, overall the project is *Fully Satisfactory*.

Lesson Learnt

68. The UNECE has a comprehensive approach to combine world class technical expertise with the proven long-established capacity to bring together policy makers, able to decide on embedding the technical proposals within policy making. The intergovernmental dialogue and negotiations mechanisms are capable of generating political will, to alter national legal frameworks towards streamlining technical processes.

Strategic Recommendations:

69. Recommendation 1: Strategically, the Sustainable Energy Division should continue using the mixed technical-political approach: the technical level brings together state-of-the-art knowledge, while the political dialogue can stimulate the politics in the UNECE member States to intensify the adoption of the best practices in coal mine industry. For the Division, the GoE on CMM brings tangible results and an added value, strengthening the position of the Secretariat.

This recommendation will play an even stronger role in the context of SDGs. It is also likely to gain importance as the biggest coal extracting countries become increasingly open and interested in adopting the best standards in safety and environmental protection;

70. Recommendation 2: The GoE should generate more knowledge applicable to broader extraction industry, in order to sustain the results, given the excellent relevancy and sustainability. This recommendation applies provided that a draft Work Plan of the Group of Experts for 2018-2019, and the GoE’s request for extension of its mandate is approved during the twenty-sixth session of the Committee on Sustainable Energy.

The mandate extension should encompass work on the transition of traditional mining companies to become integrated service companies. It should also explore the impact this transition might have on the contributions of the energy sector on sustainable development and possible formal adoption and

implementation of the standards. Recommendation 8 lists several stakeholders to be consulted in this process.

71. Recommendation 3: It is recommended to employ a network of “champions” to lead the work on implementing the recommendations created by GoE, a practice frequently observed in policy making. The “champions” would be key political figures in governments of UNECE member States, advocating for legislative changes, eventually involving the mining companies in setting national industry standards.

72. Recommendation 4: Given the raising importance of the private sector for sustainable development (also enshrined in the SDGs), the Division and GoE should frame ways to involve the private sector in enhancing the results of their activities. The partnerships with the private sector could pave the way to adopt (voluntary) industry standards, could further facilitate the knowledge transfer, and could augment extra-budgetary resources.

Operational Recommendations:

73. Recommendation 5: Strengthen internally the Secretariat to enable constant and predictable support services to the GoE. This would require a multi-level approach:

- Staffing: Ensure the Senior staff is able to focus on substantial/political work, and the junior staff is sufficient and constantly employed. Ideally, one regular staff should be allocated entirely for the GoE support, to enable work continuity;
- Resourcing: secure sufficient regular budget for the normal functioning of the GoE (e.g. some experts are not able participate in meetings as their organizations do not have enough resources to finance travel), and for the most significant activities agreed in the bi-annual Work Plans;
- Build strategic partnerships with potential donors (governmental / public agencies, mining companies, other private sector representatives) and agree multi-annual budget for the planned activities, in order to increase predictability and planning;

74. Recommendation 6: The GoE should initiate a process to establish agreed measuring standards related to its work: incidents / explosions statistics and reporting, measure capture and commercial use of methane, measure the GHG emission reductions; and common evaluation methodologies for all fossil sources of energy. This task has two constraints: a) this type of information is under direct control of safety and environmental bureaus and agencies resident in the member States, and their reliability and comparability would be a challenge; and b) it would be difficult to establish a direct attribution of the GoE’s activities to the final results – number of accidents or quantity of emissions; rather it would be a contribution to achieving set targets. The shift from output oriented measuring to outcomes indicators will support the Division and the Group of Experts in presenting more convincingly the results of their work, especially given the international rhetoric related to results based management and the raising importance of the private sector in sustainable development;

75. Recommendation 7: As an emerging practice¹¹, consider creating a “Training of Trainers” program implemented through the ICEs, to expand the knowledge base and specialist community (ideally also involving an academic program, or even creating specialized studies at higher education level). This approach should also consider elements of integrating capacity building measurement and reasonable ways of integrating results measurement into future projects;

76. Recommendation 8: To maximise sustainability, consider a more focused engagement with technical community, policy makers in UNECE member States, other UN System organizations,

¹¹ Centres of Excellence as a Tool for Capacity Building, OECD, 2014

financial markets, private sector, NGOs. It is important to bring all stakeholders to dialogue, to establish common action plan and to create the legal frameworks within the UNECE member States. For the European Union Member States, it would make sense to create a strategic partnership / technical involvement of the EU bodies responsible with energy resources, to include best practices in the national legislation.

77. Recommendation 9: It is advisable for the Division to include a stronger Results Based Management approach when creating project documentation and reports. This would make the results easily understandable to stakeholders, thus increasing credibility and evaluability. In turn, the future evaluations will have a stronger internal and external validity.



UNECE

United Nations Economic Commission for Europe

Annex 1: Terms of Reference

Evaluation of the effectiveness and impact of UNECE case studies on the application of best practice guidance for coal mine methane management

1. Objectives and Targets (Specific Functions of the Consultant)

Background

The Group of Experts on Coal Mine Methane (CMM) is mandated by UNECE to “promote the reduction of greenhouse gas emissions from coal mines by means of activities that may help the recovery and use of methane in order to reduce the risks of explosions in coal mines” (ECE/EX/2016/L.5).

The principal activity of the Group of Experts is to develop, update and disseminate the Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines. This publication is not a technical manual; rather, it is a source of guidance for senior managers and policy makers. It contains recommended principles and standards on CMM capture and use that provide decision-makers with an understanding from which to direct policy and commercial decisions.

The principles outlined in the Best Practice Guidance are illustrated by a number of case studies organized, for comparison purposes, in a common framework (Initial Conditions—Gas Control Problems—Solution). In 2014-15 the Bureau of the Group of Experts reviewed this framework and found it a useful tool to describe various coal mine problems and their solutions. Using this framework, the Group of Experts continued to collect, discuss and disseminate case studies on the application of Best Practice Guidance in specific coal mines in different regions of the world. These case studies were seen as necessary to demonstrate how the principles outlined in the Best Practice Guidance can be implemented and adapted to specific mining circumstances. At its 10th session held on 28 October 2015, the Group of Experts recommended that a case study library be developed to complement the Best Practice Guidance.

More information is available at: <http://www.unece.org/energy/se/cmm.html>. All relevant documentation will be provided to the evaluation consultant.

Objective

The objective of this evaluation is to assess the *relevance* of the work on CMM case studies to the implementation of UNECE’s sub-programme on sustainable energy, as well as its *effectiveness* in enhancing the capacity of the ECE member States to improve their CMM management. The evaluation will also address the *efficiency* and *sustainability* of these activities, in order to learn how to maintain and possibly replicate their beneficial effects in the future.

The evaluation will assess whether the activity on case studies succeeded in contributing to capacities of participating countries to implement best practices in CMM management. The evaluation should also identify the lessons learned from this activity and challenges that need further attention and that could lead to the revision of working modalities in the future, and develop practical recommendations to the UNECE's Sustainable Energy Division, coal-dependent ECE member States, other United Nations Member States that rely on coal, coal mine operators, and other partners on how to improve the efficiency and effectiveness of this work in the future.

The context in which this activity is implemented has been defined by the mandate and Terms of Reference of the UNECE Group of Experts on CMM (ECE/EX/2016/L.5). In more general terms, the impact of the activity should also be assessed against the broader framework of UNECE's work in the field of sustainable energy, in particular its role in the reduction of carbon footprint of the coal mine sector, the attainment of Sustainable Development Goals, as well as its contribution to the global commitments to combat climate change.

The thematic scope of the evaluation is the effectiveness of the process of developing case studies on the application of best practice guidance for coal mine methane management at operating coal mines around the world. The intent of the evaluation is to explore what could be done differently or better in the future.

The evaluation will provide insights into the organizational contribution of UNECE only, and not of other organizations, over the period from 1 January 2014 to 31 December 2016. The evaluation will exclude other, similar work by the UNECE Sustainable Energy Division.

In the world of coal mine methane and methane management in general, there are other competing projects and initiatives. It is therefore important to be aware of the limitations of this particular activity. Understandably, it will not be easy to establish what its individual impacts might have been, as they might overlap with those of other similar projects.

To make sure the evaluation is focused on specific impacts of the activity, the evaluator will undertake interviews, collecting feedback only from people directly involved in the activity. The evaluation process will thus engage: international and national coal mine methane experts, representatives of coal mine companies and private sector in general, as well as international, governmental and non-governmental organizations that were involved in, or benefited from, the development of case studies. If direct interviews may not be acceptable to some participants, written questionnaire could be considered.

To the extent possible, the evaluation shall cover gender and human rights aspects, taking into account guidance provided by the United Nations Evaluation Group on the matter, available at: <http://www.uneval.org/document/detail/980> and <http://www.uneval.org/document/detail/1452>.

Specific functions and tasks

Under the guidance of the UNECE secretariat, the Evaluation Consultant is required to undertake the following task in the period covered under this contract:

Task 1: An external evaluation of the sub-programme “Review of the case studies of the application of best practices guidance for coal mine methane management.”

The evaluation will seek to report on the **effectiveness** of the activity in achieving its objectives, its **sustainability** and **efficiency**, in particular in how the inputs and resources (funds, staff, time, in-kind contribution by experts) were utilized in achieving the outputs, and its **relevance** to the priorities and needs of its prospective beneficiaries and the consistency with the attainment of its overall objective.

Key questions that the evaluation will seek to answer include:

- *Relevance*: the extent to which the project is pertinent or significant for achieving the related objective and the extent to which the objective is significant to the problem addressed

- To what extent did the activity respond to the priorities and needs of the coal-dependent UNECE member States? How relevant was it to their needs and priorities?
- How relevant is it to other regions that face challenges in coal mine methane management?
- What is the relevance of the activity for the broader work of UNECE?
- To what extent are the objectives of the activity still valid? How can the activity be replicated in the UNECE region? Or in other regions?
- To what extent are the outputs consistent with and relevant to the overall objective and expected accomplishments?
- To what extent are the outputs consistent with and relevant to the intended impacts and effects?

- *Effectiveness*: the extent to which the project has attained its desired outcomes. This includes the extent to which the project has achieved its ultimate highest level outcome, its impact.

- To what extent the objective of the activity was achieved?
- How did the activity on case studies strengthen the national capacity of participating countries to enhance the coal mine methane management, improve coal mine safety, and reduce greenhouse gas emissions from coal mines?
- To what extent the expected accomplishments of the activity were achieved? In particular:
 - o How did the activity contribute to increasing the understanding of the initial conditions, opportunities and challenges in methane management in different coal mining regions?
 - o How did the activity increase the capacity of UNECE member States, and other United Nations Member States, to apply internationally recognized best practices in the abatement, recovery, and use of coal mine methane?

- What were the challenges/obstacles (if any) to achieving the expected results?
- What (if anything) has prevented to achieve the desired results?

- *Efficiency*: a measure of how well inputs (funds, staff, time, etc.) are converted into outputs.

- Were the resources sufficient for achieving the results? Were the results commensurate with the resources?
- Were the results achieved on time?
- Were all activities organized efficiently and on time?
- To what extent the resources were used economically? How could the use of resources been improved?
- Was the activity implemented in the most efficient way compared to alternatives? In particular, how do the costs and use of resources compare with other similar projects (within UNECE, other regional commissions, other UN agencies, or other organizations and initiatives)?
- How was the difference between planned and actual expenditure justified (if any)?

- *Sustainability*: Could the results be further sustained?

- To what extent will the benefits of the activity continue after its completion, without overburdening recipient countries and stakeholders?
- How is the stakeholders' engagement likely to continue, be scaled up, replicated or institutionalized?
- To what extent do the partners and beneficiaries 'own' the outcomes of the work?
- How has the activity built in resilience to future risks?
- What were the major factors which influence the achievement or non-achievement of sustainability of the activity?
- How will the activity pave the way for future work on the reduction in explosion risks and greenhouse gas emissions through recovery and use of methane in coal mines?

2. Tangible and measurable outputs of the work assignment

Task 2: An external evaluation of the sub-programme "Review of the case studies of the application of best practices guidance for coal mine methane management."

Methodology: The evaluation will be carried out using a questionnaire, followed by targeted interviews to further elaborate the findings of the survey. An extensive desk review of existing documents will also be carried out.

A **questionnaire** will be sent to all participants in capacity-building workshops and seminars, consultants, as well as relevant UNECE staff involved in the project. It will include open and closed questions (in English and Russian). To ensure objective approach, the questionnaire will be prepared by the evaluation consultant, and will be reviewed by the UNECE project manager. It will search to reply to the questions listed in section IV, formulated in a way the evaluation consultant finds best according to his/her previous evaluation experience and expertise in the region.

The **interviews** will take place via phone or other communication platform (e.g., Skype or WhatsApp). The UNECE project manager will provide the list with contact details. It is anticipated that the evaluator will make one visit to Geneva during the evaluation to meet with UNECE staff and stakeholders in Geneva.

The **desk review** will be based on progress reports and material available including the:

- Activity progress reports (presented at the Group of Expert's sessions)
- Case study presented at the Group of Expert's sessions and/or capacity-building workshops and seminars
- Other documents that the evaluator deems necessary for this exercise.

Report required: YES

No. of pages: maximum 20 pages (plus possible annexes)

Format: MS Word

Languages: English

An executive summary should briefly summarize the project, the methodology of the evaluation, key findings, conclusions and recommendations.

All material needed for the evaluation, will be provided to the consultant: project document and reports, meeting reports and publications, list of involved experts that can be interviewed by telephone.

3. Schedule of the work delivery and payments

This contract starts on 10 April 2017 and expires upon completion of the task, no later than on 9 October 2017.

The consultant submits the external Final Evaluation Report before 9 October 2017.

Payments:

The payment of USD 10,000 will be paid upon satisfactory delivery of work, no later than on 9 October 2017.

The Evaluation Consultant will complete the following phases of the evaluation process no later than specified in the timetable below:

- Inception Report: April 2017
- Preliminary research: April-May 2017
- Data Collection:
 - o progress reports, session reports, case studies, workshop evaluations (will be provided to the Evaluation Consultant by the UNECE Project Manager): April 2017;
 - o questionnaire and interviews (including trip to Geneva): May-June 2017
- Data Analysis: July 2017
- Draft Report (include timing for peer review): August 2017
- Management Response (will be provided to the Evaluation Consultant by the UNECE Project Manager): August/September 2017
- Final Report: September/October 2017

4. Performance Indicators

a) The consultant is expected to prepare a draft report covered under the terms of this contract to a high standard and in a timely and professional manner, as well as the final version of the report incorporating and addressing incorporation of the management response.

b) The evaluation should be prepared in English (see specific functions and tasks) and made available to the secretariat in electronic form.

During the contract period, the consultant is expected to communicate regularly with the secretariat and report on the progress in the preparation of the required documents and other material.

5. General requirements

The requested tasks are specific and require knowledge of energy-related capacity building projects, professional experience in design and management of evaluation processes with multiple stakeholders, and demonstrated methodological knowledge of evaluations, including quantitative and qualitative data collection and analysis for end-of-cycle project evaluations.

Annex 2: List of Documents Reviewed

- GoE on CMM Mandate and Terms of Reference (ECE/EX/7/March 2014; Annex II, Chapter V)
- GoE on CMM Mandate Extension and Work Plan (ECE/Energy/99, par. 47-48);
- Work Plans of the Group of Experts on Coal Mine Methane for 2014-2015 and 2016-2017;
- Sustainable Energy Sub-programme Quarterly Reports: Q1 2014 – Q4 2016;
- Reports of the Committee on Sustainable Energy (23rd Session, 24th Session, 25th Session);
- Reports of Group of Experts on CMM (9th, 10th and 11th Sessions, 2014-2016);
- Update on the extra-budgetary project: “Coal Mine Safety and Life Support Systems”, Ad Hoc Group of Experts on CMM, April 2013;
- Methane Management – An Economic Opportunity for Mitigation, UNECE, Dec 2015;
- Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines, UNECE; First Edition, 2010, Second Edition, 2016;
- The Challenges of The U.S. Coal Industry and Lessons for Europe, Columbia SIPA, UNECE, May 2016;
- Case Studies 1-19;
- Workshop info materials, Questionnaire, Reports (Kazakhstan 2016, India 2016);
- Terms of Reference for International Centre of Excellence on Coal Mine Methane;
- Draft Work Plan of the International Centre of Excellence on Coal Mine Methane in Poland;
- Memorandum of Understanding between the United Nations Economic Commission for Europe (UNECE) and the Central Mining Institute of Katowice, Poland, Dec 2015;
- Web-sites: <http://www.unece.org/energy/se/cmm.html>
- Other relevant documents, expert’s reports, web-sites, etc.

Annex 3: Questionnaire for face-to-face and online interviews

Evaluation of the
Effectiveness and Impact of UNECE Case Studies on the application of Best Practice Guidance for Coal Mine Methane management

Questions Guideline – April 20th, 2017

Stakeholders – UNECE relevant staff, Group of Experts on CMM, etc.

How would you rate the **Relevance** of the project towards the scope?

- To what extent did the activity respond to the priorities and needs of the coal-dependent UNECE member States? How relevant was it to their needs and priorities?
- How relevant is it to other regions that face challenges in coal mine methane management?
- What is the relevance of the activity for the broader work of UNECE?
- To what extent are the objectives of the activity still valid? How can the activity be replicated in the UNECE region? Or in other regions?
- To what extent are the outputs consistent with and relevant to the overall objective and expected accomplishments?
- To what extent are the outputs consistent with and relevant to the intended impacts and effects??

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Were the actions to achieve the results **Efficient?** (Have things been done right?)

- Were the resources sufficient for achieving the results? Were the results commensurate with the resources?
- Were all activities organized efficiently and on time? Were the results achieved on time?
- To what extent the resources were used economically? How could the use of resources been improved?
- Was the activity implemented in the most efficient way compared to alternatives? In particular, how do the costs and use of resources compare with other similar projects (within UNECE, other regional commissions, other UN agencies, or other organizations and initiatives)?
- How was the difference between planned and actual expenditure justified (if any)?

=====

Were the actions to achieve the results **Effective?** (Have the right things been done?)

- To what extent the objectives of the activities were achieved?
- How did the activities on case studies strengthen the national capacity of participating countries to enhance the coal mine methane management, improve coal mine safety, and reduce greenhouse gas emissions from coal mines?
- How did the activities contribute to increasing the understanding of the initial conditions, opportunities and challenges in methane management in different coal mining regions?
- How did the activities increase the capacity of UNECE member States, and other United Nations Member States, to apply internationally recognized best practices in the abatement, recovery, and use of coal mine methane?
- What were the challenges/obstacles (if any) to achieving the expected results?
- What (if anything) has prevented to achieve the desired results?

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- Are the results **sustainable?** Will the results lead to benefits beyond the life of the existing project?

- To what extent will the benefits of the activity (GoE, SED) continue after its completion, without overburdening recipient countries and stakeholders?
- How is the stakeholders' engagement likely to continue, be scaled up, replicated or institutionalized?
- To what extent do the partners and beneficiaries 'own' the outcomes of the work?
- How has the activity built in resilience to future risks?
- What were the major factors which influence the achievement or non-achievement of sustainability of the activity?
- How will the activity pave the way for future work on the reduction in explosion risks and greenhouse gas emissions through recovery and use of methane in coal mines?

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Further questions to clarify **cross-cutting issues**, as per HRGE in Evaluation guidance:

- Who is benefiting and who is not? (male/female, age groups, different socio economic groups)
- How effectively have equality and gender mainstreaming been incorporated in the design execution of the Programme?
- To what degree are approaches such as a human rights based approach to programming, gender mainstreaming and results-based management understood and pursued in a coherent fashion?
- How would you describe the cooperation with the counterparts (Governments, International Organizations, national institutions, other international technical entities)? Has the partnership strategy been appropriate and effective?

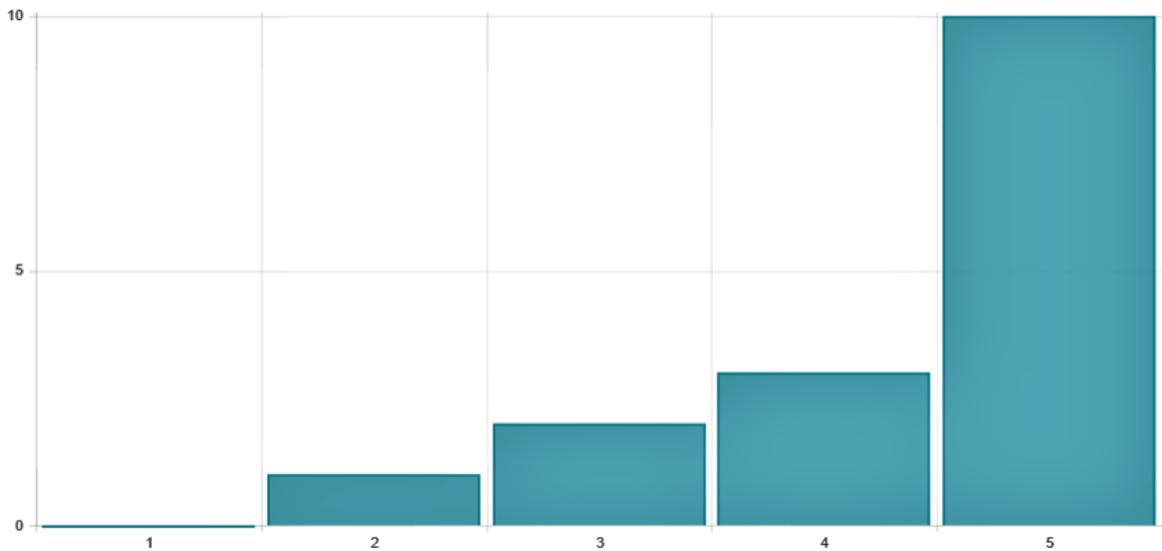
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Annex 4: Online Questionnaire Results (as of Oct 16th, 2017)

In your opinion, how relevant is the work of the CMM Group of Experts for the mandate of the Sustainable Energy Division of UNECE?

↩	1	2	3	4	5	Standard Deviation	Responses	Weighted Average
Not relevant at all - Very Relevant	0 (0%)	1 (6%)	2 (13%)	3 (19%)	10 (63%)	3.54	16	4.38 / 5
								4.38 / 5



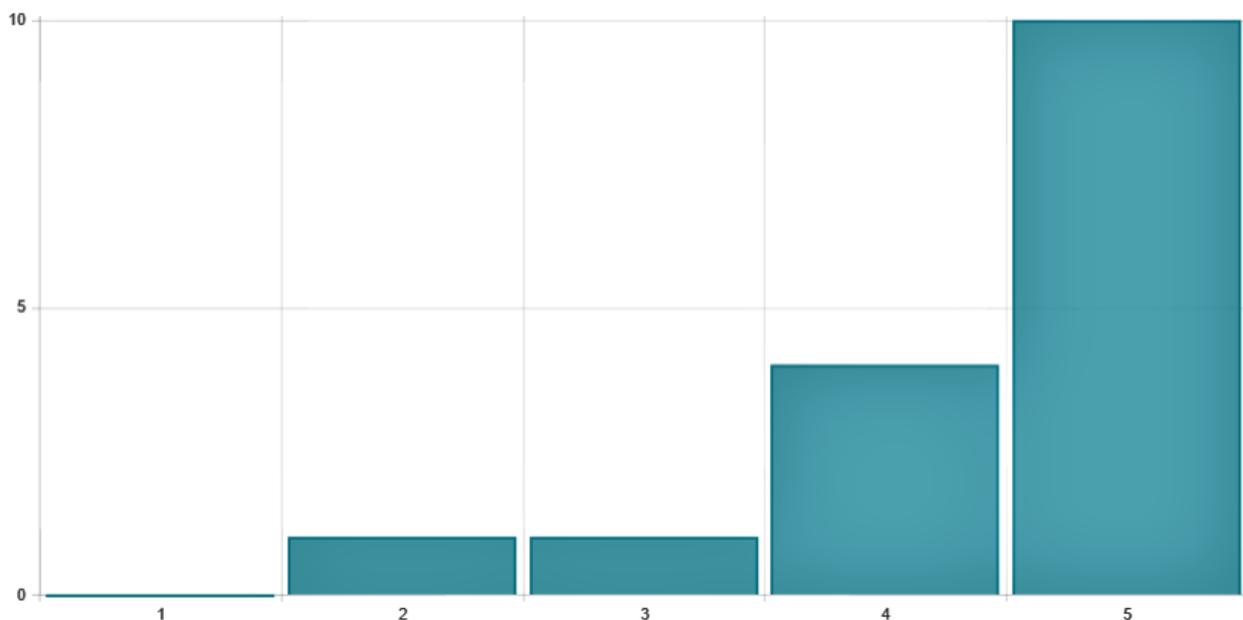
What would you consider as success factors to increase the effectiveness of the GoE CMM in supporting UNECE and its Member States (max. 3 factors)?

Text Responses

Policy adoption, education of government representatives, project implementation
New project development Verified GHG emission reductions
1. Typical examples from U/G coal mines using modern and effective gas drainage & ventilation system. 2. Computer software to simulate optimum efficiency and application
1. certified emissions reductions related to member activities are the measure
To identify and implement a project for utilization of coal mine methane at Russian enterprises.
- Adaption of best practice for in-country use (in the member states); - Implementation of relevant CMM policy (in the member states); - Active participation of the member states' experts in updating of the best practice cases and other sections of the "Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines".
Long-term financial support Engagement with coal mining companies Practical guidance and projects
1) Make methanol from CH ₄ 2) Close all coal mines on the long term to save the climate and miner's lives
More countries to participate

In your opinion, how relevant is the work of the CMM Group of Experts for the governments of the Member States?

↶	1	2	3	4	5	Standard Deviation	Responses	Weighted Average
Not useful at all - Very useful	0 (0%)	1 (6%)	1 (6%)	4 (25%)	10 (63%)	3.66	16	4.44 / 5
								4.44 / 5



Are you aware of any Member State employing at least one of the recommendations / lessons learnt drawn in the Study Cases? If yes, how many?

Text Responses

Not aware of any
Some U/G coal mines or Coal companies in China, Australia, Poland and Universities in China, Australia, Turkey
1 Poland
-no info
Yes, at least 4 (Mexico, Ukraine, Russia, Kazakhstan).
Aware of state owned mining companies in China adopting best practice guidance on gas capture and use
None they are only interested in coal fired power plants and steel plants
Three
HET
UK France Germany
Coal production efficiency Ventilation control
Show Less Responses