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Development, maintenance and implementation of the United Nations Framework Classification for Resources: Commercial aspects and financial reporting

United Nations Framework Classification for Resources applied to Commercial Assessments – Guidance

Prepared by the Commercial Applications Working Group of the Expert Group on Resource Management

Summary

This report supplements the earlier four reports by considering the outlook for revised commercial framework conditions that emerged in 2021. It provides guidance on the commercial applications of the United Nations Framework Classification for Resources (UNFC) and on commercial aspects of the United Nations Resource Management System (UNRMS) that is under development. Management of commercial opportunities and risks requires information from projects at two complementary levels: (i) the effects of projects on climate and other Sustainable Development Goals (SDGs); and (ii) the effects of climate change and other changes in other social, environmental, and economic factors on the projects and their investments. UNFC and UNRMS are complementary to other standards for disclosing environmental and social considerations including those being developed by the International Sustainability Standards Board and the US Securities and Exchange Commission. UNFC is focused on the project level, which is the foundation for enterprise-level and/or jurisdiction level analyses and disclosure. This facilitates analyses of both the impact of a project on the environmental and social conditions and the effects of these, and policies to support these, on projects.

The report reiterates the need for information exchange and collaboration among governments, industry, and the financial sector for each to develop the dynamic capabilities (understood to be the sum of qualification and capacity) to identify, develop, and apply the capabilities required to meet the SDGs. Collaboration based on integrative dynamic capabilities (Garcia, Lessard, & Singh, 2014) is required for the fundamental transition that will fully bring finance and Environmental, Social, and Governance considerations into decision-making. The collaboration will need to make each party capable of conducting and adjusting integrative activities to reach the common goals while respecting the other parties' roles and obligations. There is need to consider the full range of options to capture opportunities and mitigate risks.

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- Mr. Jeremy Webb (Tiaki Institute).

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The report was reviewed by the Bureau of the UNECE Expert Group on Resource Management and approved for issuance as a parliamentary document.

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Contents

I. Introduction

1. The Commercial Applications Working Group (CAWG) has previously submitted four reports that form an integral part of this guidance. They are:

(i) **2019: The United Nations Framework Classification for Resources Applied to Commercial assessments.** (UNECE, 2019);

(ii) **2020: The United Nations Framework Classification for Resources Applied to Commercial Assessments – Update** (UNECE, 2020);

(iii) **2021: The United Nations Framework Classification for Resources applied to Commercial Assessments - Introductory Guidance** (UNECE, 2021);

(iv) **2021: UNFC applied to commercial assessments – Update and achievements** (UNECE, 2021).

2. The summaries, conclusions, and recommendations of these four reports are included in the Annex.

3. In this report, the guidance is supplemented by considering the outlook for revised commercial framework conditions for governments, industry and finance that emerged in 2021, including:

A. The UN Secretary General's Policy Brief on Transforming the Extractive Industries for Sustainable Development (United Nations, 2021)

4. The brief concludes that:

"Lying at the heart of the energy transition, extractive industries play a central role in financing the development of many low and middle-income countries. A just transition will require profound reforms in the financial, governance, social and environmental dimensions of the extractives sector. If implemented correctly, however, extractive industries could hold the key for a sustainable future for all."

5. In reaching this conclusion, the Brief refers inter alia to the role of public-private partnerships:

"Clear, country-specific regulatory frameworks should be created, while the governance of investment in public infrastructure should be strengthened through public-private cooperation and dialogue."

and

"Ensuring a successful and inclusive transition to a new energy economy will thus not only require securing the necessary funds, but also ensuring that funds and policies are aligned with long-term sustainable development objectives, including a circular and inclusive economy."

and further

"The industry should also align sustainable resource management system with a shared principles based, integrated, sustainable resource management framework employing tools such as the existing United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) under development."

and finally:

"The interdependence of extractive industries and the energy sector calls for greater regional and global coordination to manage shocks and smooth transition processes. The United Nations, through its Regional Economic Commissions (RECs), can provide a platform for dialogue among Member

States, and serve as a source of knowledge generation and a common ground for gathering technical expertise."

6. The Brief includes Calls for Action on eighteen points. The following six of those eighteen points are of relevance for this report:

(i) ***Harmonize national standards and further enforce clear regulatory frameworks*** *to ensure oversight of all companies as part of implementing the principles of environmental sustainability, transparency, accountability, access to information, and human rights, and independent monitoring;*

(ii) ***De-risk sustainable investments through enhanced coordination between the private sector, multilateral development banks and governments*** *and continue or introduce reforms to improve access to finance and create alternative mechanisms to provide affordable energy consumption and protect the poor;*

(iii) ***Create tax incentives to encourage sustainable practices in the extractives sector****, including by shifting fossil fuel subsidies to support increased renewable energy, energy efficiency, and energy access for all, providing tax breaks and funding for capacity-building enterprises and technology/research centres, and implementing carbon pricing, taxation, and border adjustments;*

(iv) ***Implement a shared principles-based, integrated, sustainable resource management framework*** *using tools such as the existing United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) under development;*

(v) ***Create or improve regional frameworks aligning extractive industries with the Sustainable Development Goals****, the Universal Declaration of Human Rights, the Convention on Biological Diversity, the Minamata Convention and the Paris Agreement. Adhere to and support the implementation of existing frameworks, such as the African Mining Vision (AMV) and the Escazú Agreement;*

(vi) ***Invite Member States to establish a Working Group on Extractive Industries*** *to lead international efforts to transform extractive industries into an engine for sustainable development and consider implementation of the action measures above."*

B. The Glasgow Climate Pact agreed at the Twenty-sixth Session of the Conference of the Parties (COP 26) to the United Nations Framework Convention on Climate Change (UNFCCC) (UN Climate Change Conference UK 2021, 2021)

7. The Glasgow Climate Pact addresses primarily the public requirements, also with respect to the financing of the transition. It recognises the role of the capital market and the private sector part of it as follows:

"Over 450 institutions, responsible for over $130 trillion of private finance assets, are committed to net zero targets through the Glasgow Financial Alliance for Net Zero (GFANZ), within the UN's Race to Zero. Firms committed to come forward with 2025 or 2030 decarbonisation targets and over 90 asset managers or asset owners have already set targets for 2025 or 2030.

Private sector commitments must not be greenwashing. Credible implementation is crucial. GFANZ members have to commit to science-based plans based on an independent, internationally recognised methodology; are required to review their targets every five years and report their progress and emissions from their investments annually. To ensure the most rigorous approach, GFANZ has committed to periodic reporting into the Financial Stability Board and working with governments to put transition plans on a permanent regulatory footing.

Rigorous standards and disclosure are essential to ensuring the integrity of private sector net zero plans. 36 countries will require companies to provide investors with access to reliable information about climate risk to guide their investments into greener areas. To ensure a global approach to disclosing climate risk to financial markets, over 40 countries - representing over 83% of global GDP - will support a new international body, the International Sustainability Standards Board (ISSB), that will develop sustainability disclosure standards."

8. This is further emphasised by the report: Building a Private Finance System for Net Zero – Priorities for private finance for COP26 by Mark Carney, UN Special Envoy for Climate Action and Finance and the Prime Minister's Finance Advisor for COP26. (Carney):

"...But to unlock private financial flows, we need bespoke solutions for these countries: we need public private partnerships, pipelines of bankable projects, and new market structures, to facilitate commercially viable opportunities for sustainable investment."

C. The Announcement of the International Financial Reporting Standards (IFRS) Foundation to form an International Sustainability Standards Board (ISSB) (IFRS Foundation, 2021)

9. The IFRS Foundation recognises the necessity to consider the full public-private partnership when providing reporting standards that will reveal to investors the opportunities and risks that the climate change and sustainability reforms represent, and that are grounded in the impact that investments have on climate and sustainability. Therefore:

"The ISSB will draw upon expertise from several advisory groups. Technical advice on sustainability matters will be provided to the ISSB by a new Sustainability Consultative Committee, whose members will include the International Monetary Fund, the Organisation for Economic Co-operation and Development, the United Nations, the World Bank and additional expert members drawn from public, private and non-governmental organisations."

II. Importance of 2021 initiatives for the work of the Commercial Applications Working Group

10. The initiatives by the UN Secretary-General, COP26 and the IFRS Foundation referred to in section I.A-C were anticipated by the Commercial Applications Working Group in its earlier work. The importance of these initiatives is now clearly communicated. Concessionary government, multilateral and philanthropic finance will be important going forward, removing significant impediments, particularly with respect to capabilities in less developed societies. The bulk of the reforms will however need to be financed by the capital market under responsible management of opportunities and risks associated with the rapid changes.

11. United Nations Member States will need to play a strong role in orchestrating the reporting of relevant information in this regard, through among other things, reporting effects of projects on climate and sustainability. Reporting requirements may differ from traditional standards for financial reporting. For instance, financial reporting has traditionally called for conservative estimates of future production. Given that emissions follow production, this attitude will underestimate emissions and not lead to an accurate reflection of the effects on the environment. A systematic underestimation of commercial risks will result unless alternative approaches are taken.

III. Effects of policy ambitions on commercial applications of the United Nations Framework Classification for Resources

12. The policy ambitions communicated in 2021 are broad. They are currently dominated by the desire to limit global temperature rise to 1.5 degrees Celsius. For all practical purposes, this means the elimination of man-made green-house gas emissions. Implications include the need to manage unprecedented reforms of the way resources, the environment and the social, governance (UNECE, 2022), and economic conditions are being managed internationally, by jurisdictions, entities, and capital allocators. Efficient project based commercial resource management, including the management of opportunities and risks arising from physical and regulatory uncertainties will be critical in these endeavours.

13. The management of commercial opportunities and risks requires information emanating from projects at two complementary levels:

(i) The effects of projects on climate and other Sustainable Development Goals (SDGs);

(ii) The effect of the climate change and other changes in other social, environmental, and economic factors on the projects and their investments.

14. An appropriate set of disclosure standards will need to build a bridge between the impact projects will have on the environment and how environment and environmentally related regulations/boundary conditions will impact projects. This includes identifying and mapping a set of interactive and counteractive risks, i.e. reflexive risks wherein policies required to limit environmental impacts of projects (carbon prices, outlawing of particular practices/technologies, requiring particular practices/technologies) will in turn impact projects and firms. Ideally, the "scenarios" or contexts in which climate impacts and climate risk to firms are assessed, as well as those where the reflexive risks between the two are identified will be the same, e.g. those required to meet a 1.5 or 2.0 degrees Celsius pathway.

15. The jurisdictions shaping the regulatory environment are in best position to aggregate the impacts of projects within their boundaries, but the identification of the opportunities and risks resulting from regulatory change, and the communication of these to the market require the collaboration of government, private parties, and financial actors.

16. This collaboration requires information on a complete set of material projects within a jurisdiction, whether conducted by listed or unlisted entities, governments, or artisanal activities. The jurisdictions are positioned to collect this and the UN is positioned for aggregating it to the global level.

17. Information at the asset level, where the assets are defined as the legal rights to participate in projects in full (at a 100% participation) or in part as stipulated in the legal rights, is provided to jurisdictions, entities, and investors. Entities managing the projects are positioned to collect this information and report it to their partners in industry, jurisdictions, and capital allocators. Their exposure to physical and regulatory opportunities and risks may be assessed from aggregated information at these levels.

18. Commercial applications of the United Nations Framework Classification for Resources (UNFC) provide the required information for use in assessing the reflexive opportunities and risks to investors and the environment. This facilitates efficient resource management and governance, efficient industrial processes and improved management of opportunities and risks including financial risks. Using one common system is necessary, and reduces the costs of information collection, storage, analyses and communication.

IV. Commercial application of UNFC for resource management at the jurisdictional, enterprise and financial levels.

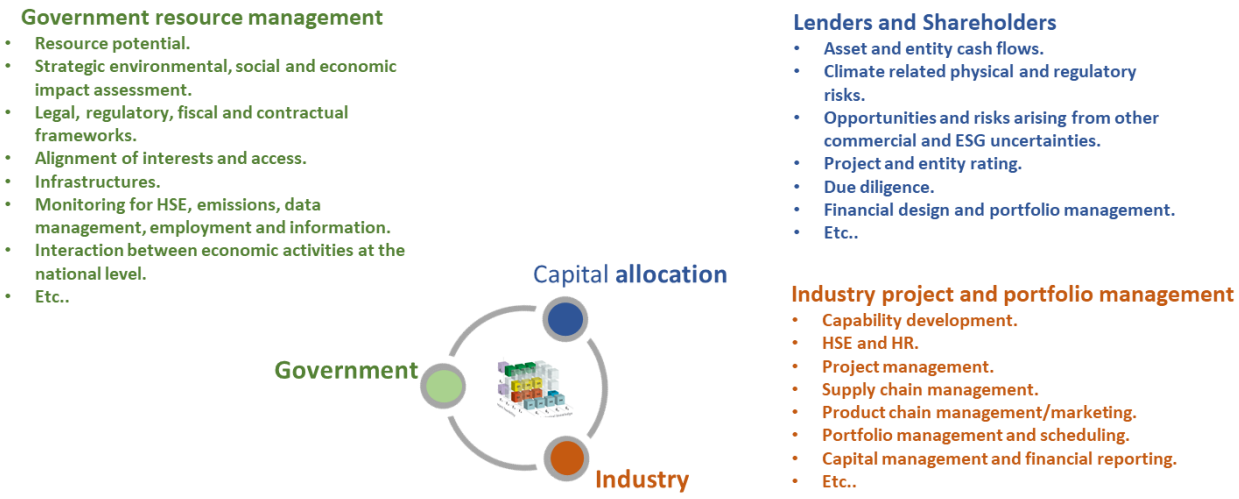
19. To reach the goals and targets set through efficient resource management, the Commercial Applications Working Group established in earlier reports that integrated dynamic capabilities in government alone and through the UN, in industry and in finance is required throughout the reforms. This is needed for setting framework conditions to reach

the goals in ways that allow the industry to deploy their best capabilities for the purposes within the constraints that the capital market can finance. Their actions must be interrelated. UN and bodies such as the ECE Committee on Sustainable Energy (an intergovernmental body) and its Expert Group on Resource Management and standard setters such as SEC and ISSB, contribute by cooperating in setting normative instruments such as UNFC and financial and sustainability reporting standards. Given the importance of the reforms required to reach the climate and sustainability goals and the magnitude of the measures required, it is foreseen that regulatory changes will be required in stages, thus requiring all parties to focus on developing and adapting their capabilities dynamically while being integrative in respecting and enhancing the capabilities and limitations of the other parties. Innovative public-private partnerships are needed (Garcia, Lessard, & Singh, 2014) (Heiberg & Lessard, 2014)

20. The Figure illustrates this principle, while at the same time showing at a generic level some decisions of interest to each party in their contribution to execute efficient resource management measured to reach the goals set.

Figure

Generic public-private partnership decisions for resource management that determine the metrics required for decisions support on projects classified in UNFC



21. The decisions that are relevant to a jurisdiction, an entity or a capital allocator will vary. The decisions shown in the Figure are merely pointers to the direction in which to search to identify them.

22. The metrics are the ones that projects carry and that are needed to take the resource management decisions. When this is included in UNFC on the G axis, UNFC becomes expanded for resource management purposes. The metrics are of two types. They are scalars, such as the cumulative future sales production, non-sales production, emission, costs, revenues etc. They are also time series of the same, of supply and product chain items, of labour, of tariffs, taxes and fees etc. Time series are the more relevant form of information as resource management is conducted on a time scale.

23. Facilitating the collection of the metrics for resource management decision support does not mean that every piece of information must be collected. What reasonably may be collected depends on the value that the information holds relative to the cost of acquiring it. It also does not mean that all the information collected must be disclosed. Disclosure is normally either regulated or provided at the discretion of the information owner.

24. Each of the decisions to be taken by the public, private or financial parties are in themselves often the result of major processes. Once they have been taken, they will affect projects and the UNFC Categories with respect to environmental, social and economic maturity and with respect to the technical feasibility and readiness. The sequence in which they are taken for single projects or as a part of a portfolio of projects will determine the efficiency of the broader process of resource management as well as the consequences of

impairment. Costly impairments are unfortunately observed, particularly when environmental, social, and economic decisions come late and result in impairment of projects that have been well advanced technically. An example of how this interactive process can fail is illustrated in the sequence of the environmental, social and economic decisions for the Bunge Limestone Deposit Project in Sweden (UNECE, 2020). The stages in the approval process are shown in the Table. Investments in preparing project implementation were incurred prior to the first granting of the permit to mine the limestone deposit. The permit was eventually withdrawn causing loss to the public purse in the form of the tax value of the investments waisted by the private purse, in addition to the administrative costs. The rest of the economic losses were charged to the private purse. In sum all parties lost through this decision process.

Table
Stages of the Bunge Limestone Deposit Permit[1]

Year	*Court verdict*	*UNFC E Category*
2008	1st instance, application turned down.	E3
2009	2nd instance, partial permit granted.	E2
2010	Supreme Court, sent back the case to the 1st instance.	E2
2011	1st instance, turned down the permit.	E3
2012	2nd instance, permit granted.	E1
2013	Supreme Court, granted partial appeal, due to Natura 2000 evaluation. Case sent back to the 1st instance.	E2
2014	1st instance, permit granted. Case appealed.	E1
2015	2nd instance trial put on hold due to new Natura 2000 proposal.	E2
2015	Swedish Government, Decision on a new Natura 2000 area.	E2
2018	2nd instance, taking on the trial which was on hold since 2015. Permit not granted.	E3
2018	Supreme Court turned down an appeal. The 2018 verdict came into legal force.	E3
The UNFC F and G Categories were at an early stage concluded to be F2 and G1.		

25. The oil and gas activities on the Norwegian Continental Shelf can be seen as a success case, although elaborated over a 50-year period that started well before the formulation of UNFC (Åm & Heiberg, 2014) (Lund, 2014) (Norwegian Ministry of Petroleum and Energy/ Norwegian Petroleum Directorate, 2022). The success is characterised by:

- Simple land ownership at the outset
- Early strategic impact assessments, identifying where activities can take place and how, and where they cannot take place. This has led to the holding back of gas production for prevention of flaring and reservoir losses of oil and energy. It has also led to early prevention of activities before sizeable investments have been incurred in sensitive areas such as near the world scale fish concentration off the Lofoten Islands, to mention a few examples

[1] Natura 2000 is the largest coordinated network of protected areas in the world. It offers a haven to Europe's most valuable and threatened species and habitats (https://ec.europa.eu/environment/nature/natura2000/index_en.htm).

- Attracting finance from the international capital market gradually moving from carried state participation and gross taxes towards cash flow (Brown) taxes aligning economic interests and facilitating the entry of diverse junior exploration companies
- Extensive use of normative instruments and government reporting
- Engagement, development, and retention of international and national industrial capabilities
- National stimulation of public and private research efforts, particularly in exploration, reservoir technology, well construction and subsea technology, all done in a high tax environment. This has increased both discovery and recovery by billions of barrels, improved well productivity and reduced the need for platforms
- Using licensing as the principal instrument for managing activities in time and space. While licensed projects were never interrupted, discretion over licensing was used to drive innovation and greater recovery
- No flaring and high Health, Safety, and Environment (HSE) standards
- Preserving economic value at the source of production through fiscal instruments, and infrastructure facilitating high recovery
- Export of commodities produced to the international market currently at a rate of over 2 billion tonnes of oil equivalent (boe) per day, including about 25% of Europe's gas consumption
- A Government take above 80%
- Return of capital to the international capital market in the form of a 1.2 trillion Euro fund invested outside Norway by Norges Bank's Investment Management branch (Norges Bank, 2022).

V. Conclusions and recommendations

26. UNFC is shaped for commercial resource management at the jurisdictional, asset, entity, and financial levels for the project types it is developed for. Currently, it applies to extractive activities, underground storage, renewable energy and anthropogenic projects. Applications may be expanded to other project types. This comes from it being anchored at the project level, whereby it may contain the metrics that projects carry. Of interest are the metrics needed for resource management decision support throughout the various levels of project maturation. UNFC helps assess the commercial values of the legal rights to participate in them. By being project-based UNFC is applicable across decisions levels from the more abstract policy levels to the detailed management of physical activities.

27. UNFC is structured to support critical assessment of the physical and regulatory opportunities and risks that social, governance, environmental, and economic environments represent for projects and project investments.

28. UNFC is also structured to support critical assessments of the opportunities and risks that projects represent for the environmental, social, and economic environments.

29. A prerequisite for opportunities and risk management is that this common UN-based standard is applied at the jurisdictional, enterprise and financial levels, providing inter alia the inputs needed for international sustainability and financial reporting. The current needs to assess both financial and environmental effects need to recognise that a conservative estimate with respect to future production, often reflected in financial reporting will be at odds with an estimate of how large the environmental risk associated with a project may be. By introducing UNFC based sustainability reporting, more emphasis will need to be on the expected (G1+G2) values of the quantities estimated than on low (G1) values. More generally, assessments of opportunities and risks will need to consider the consequences that arise over the full range of outcomes together with the options to capture the opportunities and mitigate the risks.

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Annex

Summaries and conclusions of earlier reports of the Commercial Applications Working Group

2019: The United Nations Framework Classification for Resources Applied to Commercial assessments. (UNECE, 2019)

1. The report summary is:

"This report serves as background for the further work of the Commercial Working Group.

It recognises the need to distinguish between quantities that are ready for buying and selling in a market and are defined as commercial quantities, from those quantities that are produced for direct use without going through a market.

The United Nations Framework Classification for Resources (UNFC) is well suited to classify both. No substantial change is required in its structure. However, the term commercial displayed in the UNFC needs to be replaced by a term covering both types of quantities. Furthermore, "economic" needs to be defined in a way that is relevant to both. The term is taken to mean that the benefits derived from the quantities exceed the efforts of obtaining them. This is often expressed in monetary terms that will require a revenue, which is not necessarily relevant for quantities that will be used without being sold.

The above conclusion is communicated now since it may impact the ongoing update of the UNFC.

Further conclusive work from the Commercial Working Group will await the outcome of the update in order to ensure that the official communication from the Expert Group on Resource Management over the longer term is internally consistent."

2. The conclusions and recommendations established:

"87. To meet the Sustainable Development Goals and the climate change mitigation ambitions requires strong dynamic and integrative capabilities in both the public and the private sectors and in the public-private partnership. Government sets framework conditions that allow industry to deploy its best capabilities in ways that the capital markets can afford to finance. Strong and rapid reforms are required to meet the current ambitions. They may need to be carried out stepwise where one step builds on the previous. Each step may require new capabilities both in the public and private domain and in the public-private partnership. In this process, the availability of energy and raw materials as reflected through UNFC inventories is crucial. So are commercial assessments of production, projects and assets in determining whether the chosen paths are commercially possible.

88. UNFC is unique in three aspects:

(a) it is global, matching the increasing scope of capital market;

(b) it applies to multiple commodities matching the needs for transformation of energy and raw material services going forward;

(c) it takes explicitly into account economic, social and environmental considerations separately from the technical and industrial considerations in executing the projects.

89. This makes it an ideal basis for an international corporate public reporting standard going beyond financial reporting.

90. It is recommended that an update of the UNFC ensures that commercial assessments are facilitated. No needs for substantial changes have been identified, but a need to change certain nomenclatures are necessary.

91. It is further recommended that an establishment of a UN Resource Management System be built on the UNFC, but with full consideration of the information carried by the projects, also beyond the bare resource quantities. Notably, this includes estimated time series of inputs and outputs, checked against performance and the corresponding cash flows."

2020: The United Nations Framework Classification for ResourcesApplied to Commercial Assessments – Update (UNECE, 2020).

3. The report summary is:

"This report complements and updates the report of the Commercial Applications Working Group of 2019 (1), taking full account of the United Nations Framework Classification for Resources (UNFC) Update 2019 (UNECE, 2019) that was issued in December 2019. It is intended as a document for discussion of further work. It is not a guideline for commercial applications of UNFC, respecting that individual stakeholders may wish to tailor applications to their specific needs. The report distinguishes between commercial products and commercial assets, both of which are bought and sold. Commercial assets are the legal rights that stakeholders (including governments through the fiscal system and otherwise) hold in the projects that are classified in UNFC. Application of UNFC in conventional commercial assessments of both products and assets is described in section III. Valuation is particularly important in making commercial assessments. This often requires information beyond the quantities to be produced, such as time series of costs, revenues, emissions, labour, material and other inputs. The projects carry this information and the legal rights define how they get included in the assets. Section IV is about conventional valuation. The potentially far more important issue of the consequences on valuation of the reforms required to reach the SDGs is addressed in section V. It is concluded that these two issues require further substantial work, to be related to decision analyses. Section VI clarifies the well-established truth that efficient development requires standards, in this case IT standards for inter alia commercial applications of UNFC. This issue is introduced in section VI and requires major follow-up. Finally, section VII presents the conclusions and recommendations. The report contains an Annex on accounting for UNFC that combines the technique of input-output tables used in national statistics with the design structure matrix techniques used in project management. Both techniques have proven powerful, and their proposed combination is expected to be useful in commercial applications of UNFC."

4. The conclusions and recommendations established:

"41. UNFC has a range of features which make it uniquely suited for transparent commercial evaluation such as:

(a) Global acceptance;

(b) Matching the increasing scope of capital markets;

(c) Applicability to single- or multi-resource projects, including anthropogenic(secondary) resources as managed in a circular economy;

(d) Flexibility, matching current and emerging needs for transformation of energyand raw material services;

(e) Reflecting the SDGs stated requirements for balanced, integrated managementof resources taking full account of environmental, social and economic considerations for classification and resource progression;

(f) Accommodating technical and industrial considerations;

(g) Factoring in considerations of the relative confidence in estimated quantities in categorising whether projects can or even should be executed.

42. UNFC therefore facilitates making realistic commercial assessments both of commercial quantities and assets to be sold and bought.

43. The Commercial Applications Working Group recommends:

(a) That efforts are made to produce realistic UNFC inventories of resources in the markets where they are traded. This will need to include information on the cost of supplies in order to assess the relative merit of alternative sources and likely reactions of producers to changes in framework conditions and notably to the introduction of carbon costs;

(b) That the Expert Group on Resource Management further facilitates commercial assessments including the development of standards for international data structures;

(c) That the Commercial Applications Working Group be encouraged to develop the topic of valuation in greater detail, elaborating on the estimation of mean values and relate it to decisions analyses. This work should include considering the impacts on valuation of reforms to meet the SDGs;

(d) That UNRMS be built on UNFC, with full consideration of the information carried by the projects, also beyond the bare resource quantities. Notably, this includes estimated time series of inputs and outputs, checked against performance and the corresponding cash flows;

(e) That the Expert Group examines the convenience of shifting the Category E3.1of UNFC (Estimate of product that is forecast to be developed, but which will be unused or consumed in operations) from the E to the F axis in future revisions of UNFC."

2021 The United Nations Framework Classification for Resources applied to Commercial Assessments - Introductory Guidance (UNECE, 2021)

5. The report summary is:

"This introductory guidance on application of the United Nations Framework Classification for Resources (UNFC) to commercial assessments shows how effects of policy changes on projects and assets as well as the evolution of projects and assets over time can be presented. This involves the identification of projects that may be impaired by policy changes and projects that may be enhanced by them. Policy changes are highly likely to be implemented over the project lifetimes, but it is uncertain how, when and where. This forces commercial assessments to be made considering what likely changes could be, and what the likelihood for their implementation is. In addition, or consequently, the project metrics change over time. The report also shows how this may be presented. Valuation and reporting will need to honour the policy uncertainties. Valuation may help ascertain or not the realism of implementing the changes. The introductory guidance recognizes that complex quantitative research is required to assess the global and national consequences of policy changes, and to help design effective ones. The same research is required to value projects, assets and portfolios and to produce understandable and simple aggregated reports to meet stakeholders' needs including impacts on and demand from other stakeholders, e.g. communities, Non-Governmental Organizations etc. For this a global UNFC (UNECE, 2020) based open source data structure with applications is required and a solution is suggested. Whilst the standard data structure must be global, applications will need to be tailored to stakeholders' needs. They vary between jurisdictions and over time. The structure to be developed will benefit from building on existing structures such as that of the Open Group,[2] the European Union Inspire Directive, the European Geological Data Infrastructure and others. None of this will be of value without securing quality in data, work processes and governance."

6. The conclusions and recommendations established the following:

"51. Commercial applications of UNFC requires that commercial estimates be made to reflect the environmental- social- and economic conditions that may govern projects and assets over their lifetimes. This can span decades after the decision to

[2] www.opengroup.org

implement has been taken. The estimates must relate both to possible policy changes and to the evolution of projects and assets over time.

52. Valuation must consider the conventional elements of valuation, including uncertainties associated with each activity along the value chain. In addition, valuation must take into consideration the effects of policy changes and the probability of their occurrence. The probability for change is quite high given the resolve to reform economies to meet the SDGs and the Paris Accord. Finally, options to capture the opportunities and mitigate the risks resulting from the uncertainties must be valued.

53. This requires adequate information. Information must be captured and made available through adequate and global UNFC data standards, structures and processes.

54. The information generated must have known quality and reliability. For this, relevant quality assurance and control processes must be in place.

55. The Commercial Applications Working Group recommends that substantial support is provided, first and foremost to allow the UN to detail and implement the measures that the UN can and must implement to secure the commercial application of UNFC, and that this support be shaped in a manner that serves the other key stakeholders as well.

56. The introductory guidance provided in this document should be complemented by three activities:

(a) A well-financed effort to produce demonstrations of an open source data structure for inventories and for how this can be used to quantify the effects of policy changes, and to compare and contrast projects and portfolios by key stakeholders;

(b) A detailed review of the needs of key stakeholders, including communities, NGOs etc as detailed in Chapter V;

(c) Consideration of the development of UNFC specifications for commercial applications."

2021: UNFC applied to commercial assessments – Update and achievements. (UNECE, 2021)

7. The report summary is:

"This paper supplements the three previous papers issued by the Expert Group on Resource Management Commercial Applications Working Group in 2019, 2020 and 2021 and the United Nations Economic Commission for Europe webinar "How the United Nations Framework Classification for Resources (UNFC) can help channel investments into energy and resource projects for sustainable development" held on 11 March 2021. It proposes that success in achieving the Sustainable Development Goals will be higher if the parties collaborate in an enhanced dynamic and integrative public-private partnership, where the public side (the United Nations and governments) set policies and operate framework conditions that allows industry to deploy its best capabilities in ways that the capital market can finance. The paper illustrates this through the example of the response of the Norwegian Government to the 2020 pandemic-related drop in oil prices. An example that illustrates how policies and private decisions interact and how they can be better aligned."