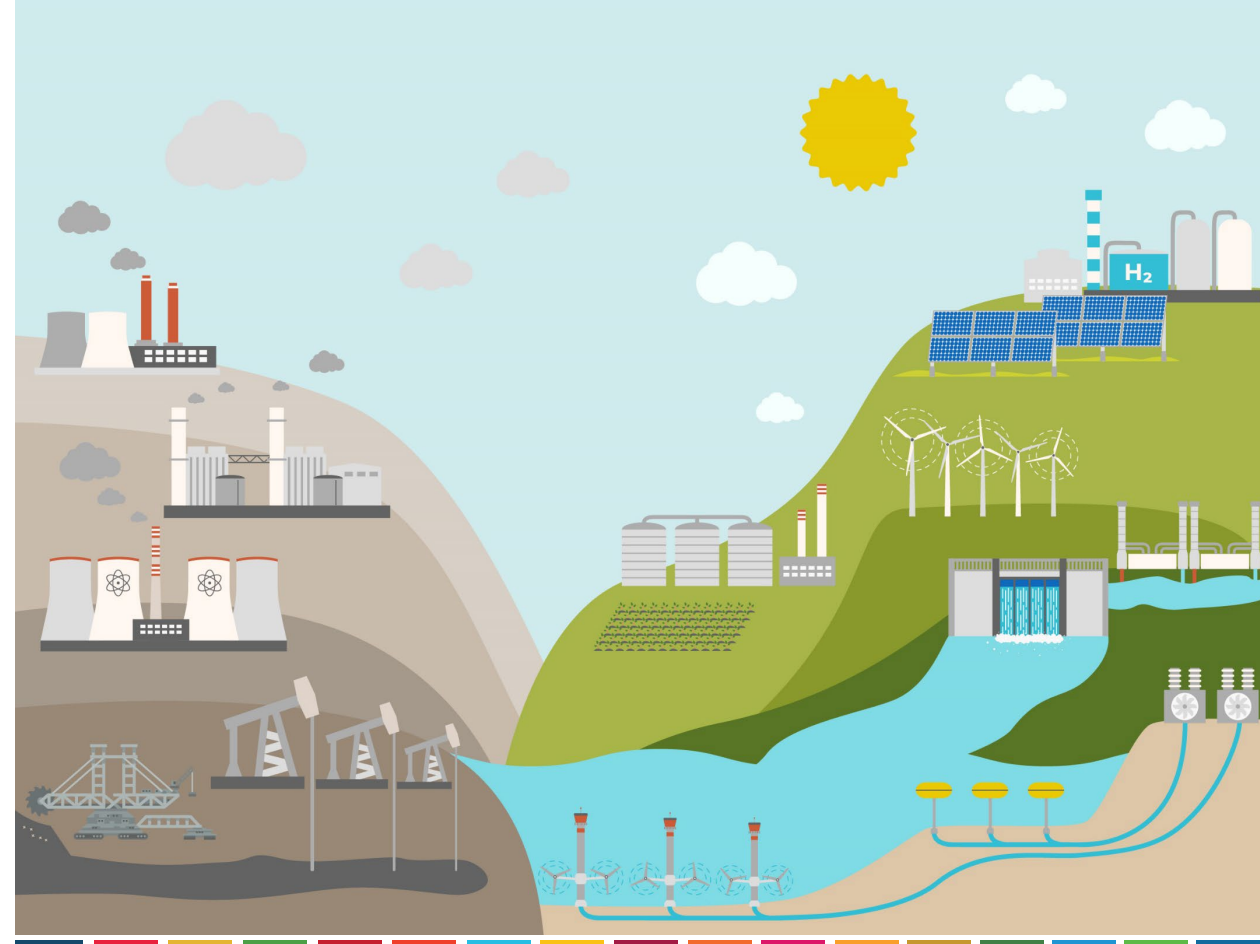


G axis uses

Task Force report & recommendations



RESOURCE MANAGEMENT WEEK 2024



UNECE

Purpose of the Task Force

- EGRM 14 recognized that the G axis is being used in different ways – for different resources and applications.
 - G axis Degree of confidence (in estimated quantities). What does it mean?
- Task Force to clarify and recommend way forward

Alistair Jones (Chair)	Academia / oil & gas, carbon storage
Hendrik Falck	Profession regulators and industry / minerals
Ulrich Kral	Government sector / anthropogenic
Alex Shpilman	Private sector / oil & gas
Slavko Šolar	UNECE / minerals
Hari Tulsidas	UNECE / nuclear
Marina v. Vietinghoff-Scheel	Government sector / anthropogenic



G axis Task Force – report summary



- Different uses of the G axis clarified and explained, based on analysis of case studies & bridging documents, and extensive discussion
- Approximate correspondence between uses defined to assist application
- Consequences of current situation highlighted, and options to manage these identified
- Other related issues identified
- Recommendations made to EGRM



Different uses of G axis clarified and explained

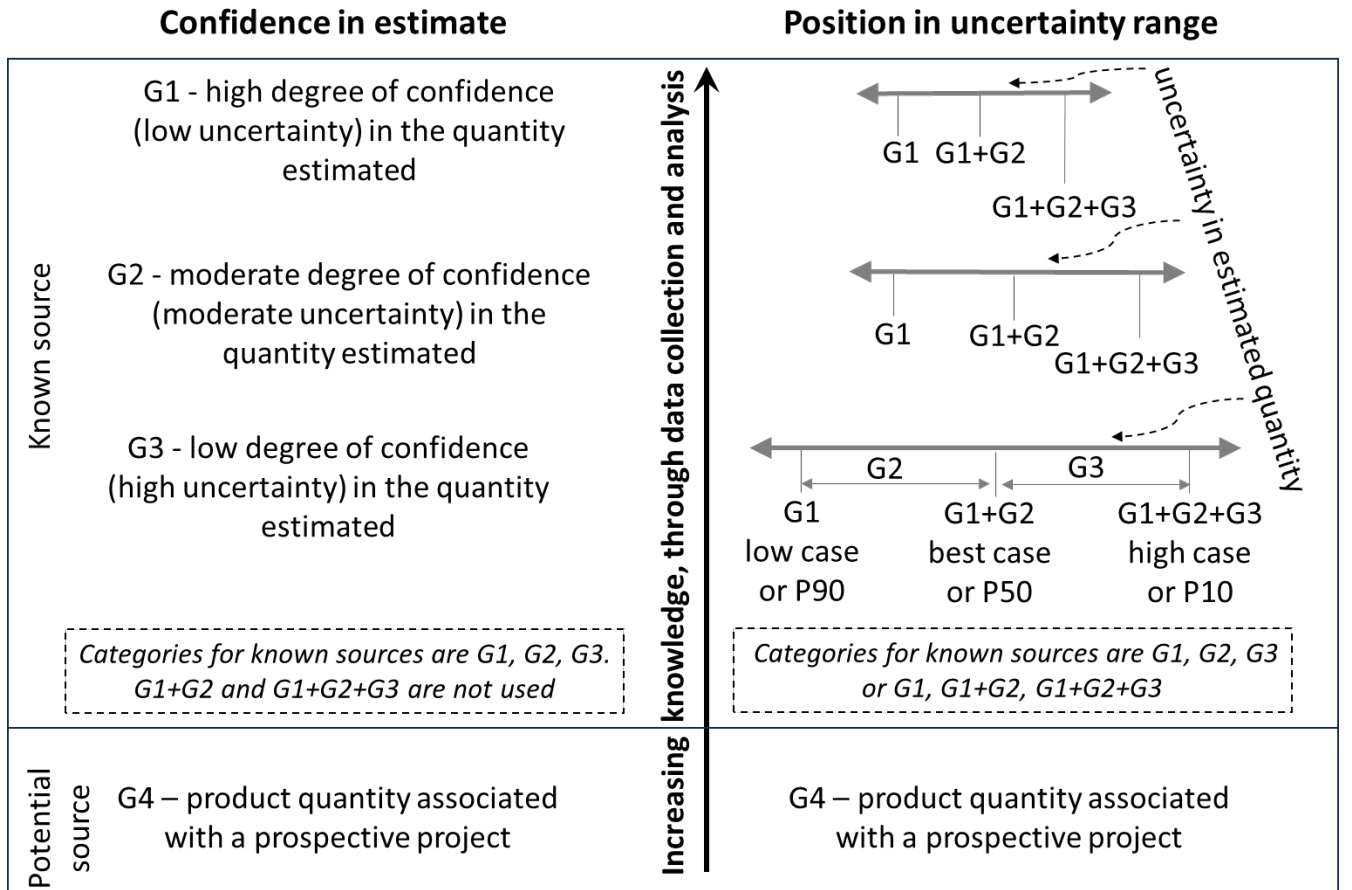
examined case studies, discussion, review by TAG



minerals, nuclear, anthropogenic petroleum, injection, renewables

G axis Degree of confidence in estimated quantities

- Review of case studies and bridging documents
- Extensive discussion
- TAG review and feedback
- Presentation to Bureau



Different uses of the G axis clarified and explained

	Definition ^a	Supporting Explanation ^a	Confidence in estimate ^b	Position in uncertainty range ^c	
				deterministic	probabilistic
G1	Product quantity associated with a project that can be estimated with a high level of confidence.	Product quantity estimates may be categorized discretely as G1, G2 and/or G3 (along with the appropriate E and F categories), based on the degree of confidence in the estimates (high, moderate and low confidence, respectively) based on direct evidence. Alternatively, product quantity estimates may be categorized as a range of uncertainty as reflected by either (i) three specific deterministic scenarios (low, best and high cases) or (ii) a probabilistic analysis from which three outcomes (P90, P50 and P10) are selected. In both methodologies (the “scenario” and “probabilistic” approaches), the estimates are then classified on the G Axis as G1, G1+G2 and G1+G2+G3 respectively.	There is a high degree of confidence (low uncertainty) in the estimated quantity of products based on direct evidence as of an effective date.	The low estimate of the quantity of products.	The P90 estimate of the quantity of products.
G2	Product quantity associated with a project that can be estimated with a moderate level of confidence.	In all cases, the product quantity estimates are those associated with a project.	There is a moderate degree of confidence (moderate uncertainty) in the estimated quantity of products based on direct evidence as of an effective date.	The estimated incremental products such that G1+G2 is the best estimate. Since G2 is incremental, it cannot be estimated unless G1 is also estimated.	The estimated incremental products such that G1+G2 is the P50 estimate. Since G2 is incremental, it cannot be estimated unless G1 is also estimated.
G3	Product quantity associated with a project that can be estimated with a low level of confidence.	Additional Comments The G axis categories are intended to reflect all significant uncertainties (e.g. source uncertainty, geologic uncertainty, facility efficiency, etc.) impacting the estimate forecast for the project. Uncertainties include both variability and the efficiency of the development and operation (where relevant). Typically, the various uncertainties will combine to provide a full range of outcomes. In such cases, categorization should reflect three scenarios or outcomes that are equivalent to G1, G1+G2 and G1+G2+G3.	There is a low degree of confidence (high uncertainty) in the estimated quantity of products based on direct evidence as of an effective date.	The estimated incremental products such that G1+G2+G3 is the high estimate. Since G3 is incremental, it cannot be estimated unless either G1 and G2 or G1+G2 are also estimated.	The estimated incremental products such that G1+G2+G3 is the P10 estimate. Since G3 is incremental, it cannot be estimated unless either G1 and G2 or G1+G2 are also estimated.
G4	Product quantity associated with a prospective project, estimated primarily on indirect evidence.	A potential project is one where the existence of a developable product is based primarily on indirect evidence and has not yet been confirmed. Further data acquisition and evaluation would be required for confirmation. Where a single estimate is provided, it should be the expected outcome but, where possible, a full range of uncertainty should be calculated for the potential project. In addition, it is recommended that the chance of success (probability) that the prospective project will progress to a Viable Project is assessed and documented.	The use is as described in the supporting explanation given in column 3.	The use is as described in the supporting explanation given in column 3.	The use is as described in the supporting explanation given in column 3.

- See report footnotes and main text for additional explanations

Approximate correspondence between uses



Class	Minimum E and F Categories		Approximate correspondence between uses of G axis	
			Confidence in estimate	Position in uncertainty range
Viable Projects	E1	F1	G1	G1
			G2	G1+G2
			G3	G1+G2+G3
Potentially Viable Projects	E2	F2	G1	G1
			G2	G1+G2
			G3	G1+G2+G3
Non-Viable Projects	E3	F3	G1	G1
			G2	G1+G2
			G3	G1+G2+G3
Prospective Projects	E3	F3	G4	G4



Consequences and Options

- Consequences of current situation
 - Poor communication
 - Different inventories of resources will be misunderstood -> incorrect resource statistics then used as a basis for policy and decision making
 - Difficulty of comparing production from projects of different resource types where the G axis has been used in different ways
 - inexperienced users misapplying UNFC e.g. when aggregating
- Options (ideal is universality, clarity, comparability, no disruption)
 - No change – no disruption but consequences remain
 - **Provide guidance and naming convention – universality, more clarity, approximate comparability, little disruption (recommendation of the majority)**
 - Replace the G axis with two axes - universality, good clarity, approximate comparability, disruptive
 - Only allow one uses – good clarity, strong comparability, undermines universality, very disruptive for some users



Recommendations

https://unece.org/sites/default/files/2024-04/G%20axis%20TF%20Report%20ECE-ENERGY-GE.3-2024-11_ENG.pdf

- Recognise that the G axis is used differently for different purposes, but that there is an approximate correspondence between G axis categories
- Document guidance and naming convention for these uses: “confidence in estimate” & “position in uncertainty range”, and show how comparisons can be made
- Working Groups consider adding resource-specific guidance on how to estimate quantities and assign appropriate G axis categories (some exists e.g. petroleum)



Recommendations

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- Recognise that the G axis is used differently for different purposes, but that there is an approximate correspondence between G axis categories
- Document guidance and naming convention for these uses “confidence in estimate” & “position in uncertainty range”, and show how comparisons can be made
- Working Groups consider adding resource-specific guidance on how to estimate quantities and assign appropriate G axis categories (some exists e.g. petroleum)
- **Address related issues**
 - List relevant UNFC documents for different users
 - Update project guidance note
 - Guidance on aggregation, and on direct vs. indirect evidence



THE VIEWS EXPRESSED ARE THOSE OF [AUTHOR NAME AND/OR ORG] AND DO NOT NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.

Thank you!

Alistair Jones

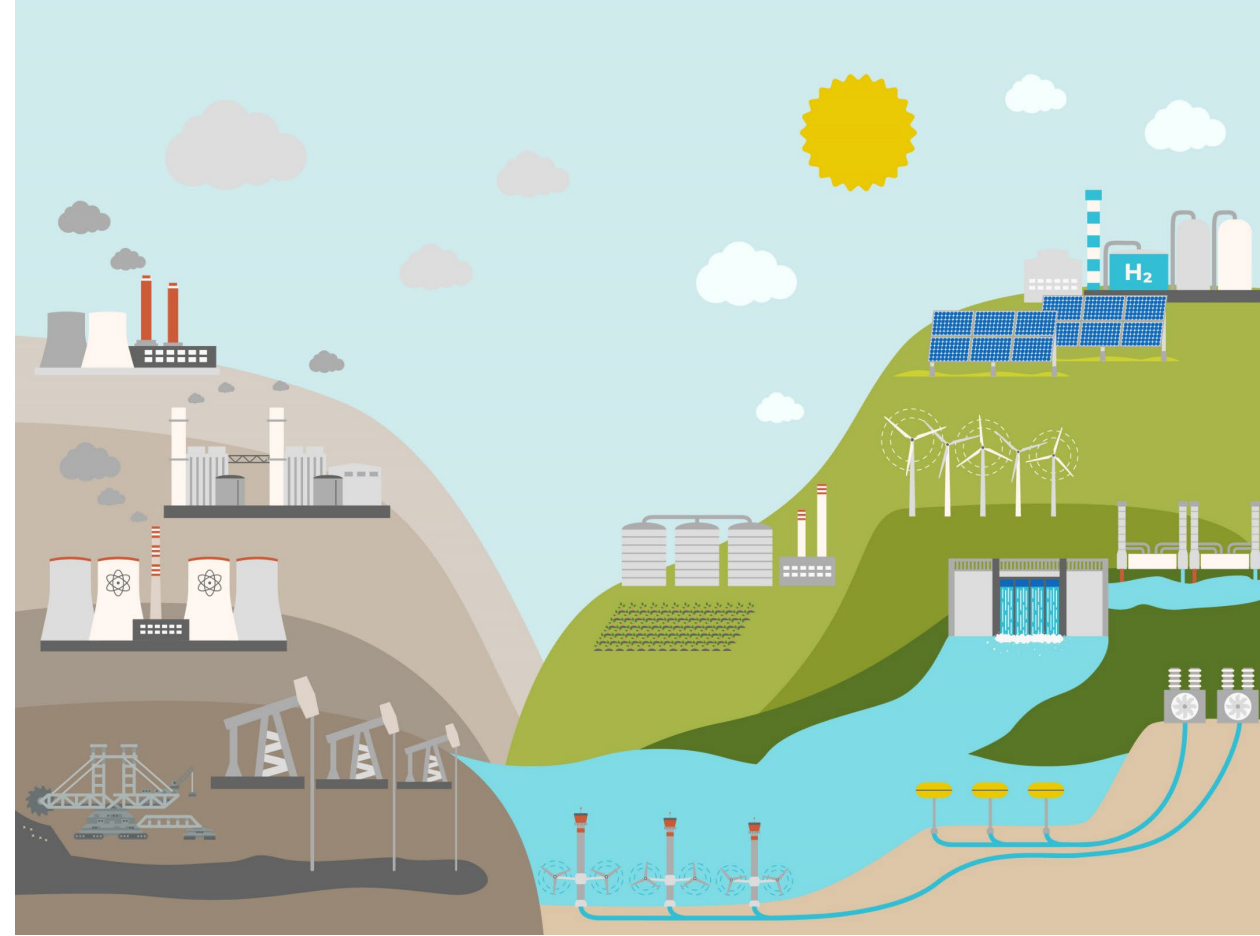
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Date 26 | 04 | 2024, Geneva



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