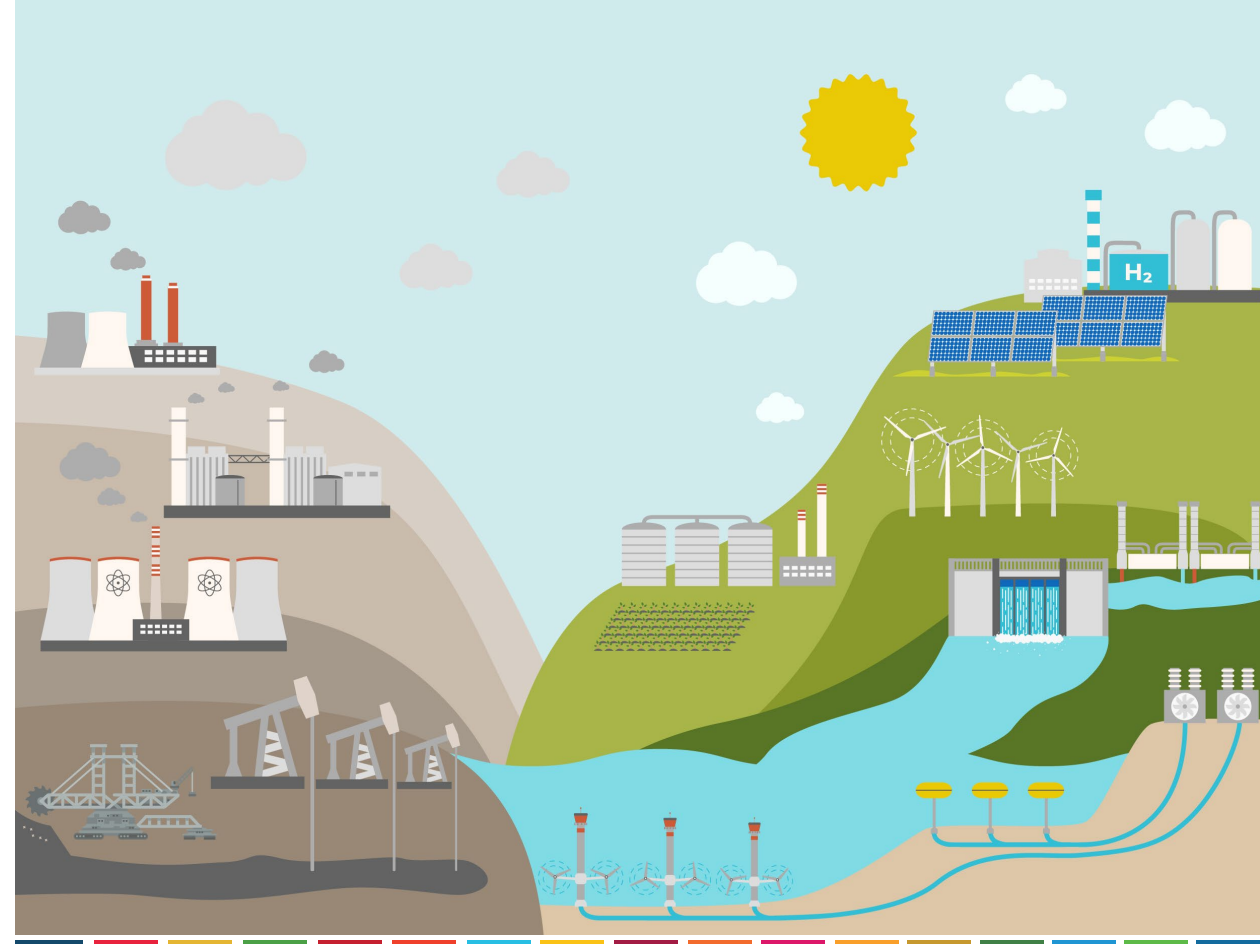


Quality Assurance

Who assures what and how?



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Quality Assurance and Quality Control

- Quality Assurance – prevention of faults
 - A broad process for preventing quality failures. The QA team is involved in all stages. The QA team operates proactively. They seek to uncover and address the sources of quality problems.
- Quality Control – detection of faults
 - QC is a set of activities for ensuring quality in products. The activities focus on identifying defects in the actual products produced. QC team is reactive, checking the product for mistakes.



Requirements for robust classification

Quality Assurance – who assures, what?

	Standards and Guidance	Competence / Qualification	Data and Information	Processes
	consistent, clear, sufficient standards & guidance	competence of preparer to evaluate & categorise, of user to understand & interpret	data/info. to support estimates & classification, material and transparent information users require	robust process for estimating, categorizing, assuring, reporting
EGRM	propose and maintain UNFC system and guidance as basis for standards, convene discussions to clarify and improve	training in UNFC, guidance on competence,	guidance on information requirements	guidance on process requirements
Regulators - mandatory reports	define standards and rules of application	define provider competence requirements	define reporting requirements	define process requirements, may choose to monitor and enforce
Receivers - required information	agree standards used		define what information is required from provider	make checks on quality of assessments
Providers	internal practice to interpret and apply regulator/receiver requirements	train/check qualified/ competent estimators, classifiers	conduct & document assessments, material and transparent reporting/information	internal accountabilities & responsibilities, competence, reviews, due diligence, audit trail
Consultants		provide competence	conduct assessments	conduct reviews/audits
Educators, professional bodies	propose standards and guidance	educate and train, regulate qualifications, develop technical methods	propose information requirements	



What is assured and how?

Assurance of assessment and process

- Assurance conducted by provider (independent team) or consultant is central to achieving robust, consistent classification information
- Assuring assessment (next slide)
- Assuring internal process
 - Internal practice consistent & sufficient to meet regulator/receiver requirements?
 - Qualified/Competent assessors (relevant, up to date, sufficient knowledge & skills)?
 - Timely reviews conducted and actions completed?
 - Signoff by accountable persons?
 - Documentation stored?
 - Due Diligence process in place and followed – raising issues, taking actions?
 - Audit trail in place?



Assuring Assessment

Technical and Commercial review



- Example review of Bioenergy assessment
 - Helpful level of detail in UNFC Bioenergy Specs.
- Evidence for categorization?
 - Relevant data & information available and used
 - E axis e.g. access/entitlement, market & sales connectivity, environmental and social requirements....
 - F axis e.g. development plan, feasibility of conversion, maturity of technology, commitment
 - G axis: Appropriate technical methods and estimates?
 - G axis level of confidence supported by direct evidence e.g. consistency with available track record and analogues
- Specifications met?
 - e.g. project lifetime consistent with technical, license and economic considerations
- Documentation
 - technical and commercial assumptions, evidence, estimate and categorization

UNFC Bioenergy Specifications 2017	Checks for each Project	Y/N	Comment
II A 1	Energy Source is renewable		
II A 2	Products are Predefined Energy Products (IIA2), or meet definition of an Energy Product (IIA2)		
II A 4	Non-Energy products excluded from resources		
II B	Reference Point is defined and quality of Energy Product meets appropriate specification		
II C	Project Lifetime is consistent with technical, licence and economic considerations		
II F	Intermittent Production appropriately accounted for		
II G	Multiple resource types have been separately estimated and appropriately aggregated		
	Activity set defined and used consistently in technical and economic evaluation		
III A 3 6.2	Economic assumptions supported by evidence and consistence with agreements and requirements		
III A 3 6.3	Policy Support assumptions consistent with evidence		
III E	Recognised estimation methods used; data and methodologies are referenced		
III G	Best endeavours made to avoid double counting of Bioenergy Sources or Bioenergy Products		
III H	Conversion factors provided to SI units; conversions disclosed e.g volume/mass to energy		
Table 3	E axis: Categorisation consistent with requirements		
	Access and Entitlement		
	Market and Sales Connectivity		
	Authorisation (regulatory and permitting)		
	Economic Case Validation		
	Social and Environmental		
Table 4	F axis: Categorisation consistent with requirements		
	Development Plan		
	Availability of Biosource, including maturity of technology		
	Feasibility of conversion, including maturity of technology		
	Commitment		
Table 5 and Table 7	G axis: level of confidence supported by direct evidence		
	Biomass yield		
	Biomass physical properties		
	Losses in storage or transport before conversion		
	Quantity accessed (contractual or otherwise)		
	Throughput or processing rate of conversion		
	Technical lifetime and maintenance plan		
	Monetization		
	Consistency with available track record and analogues		
	Documentation of technical and commercial assumptions, evidence, estimate and categorization		



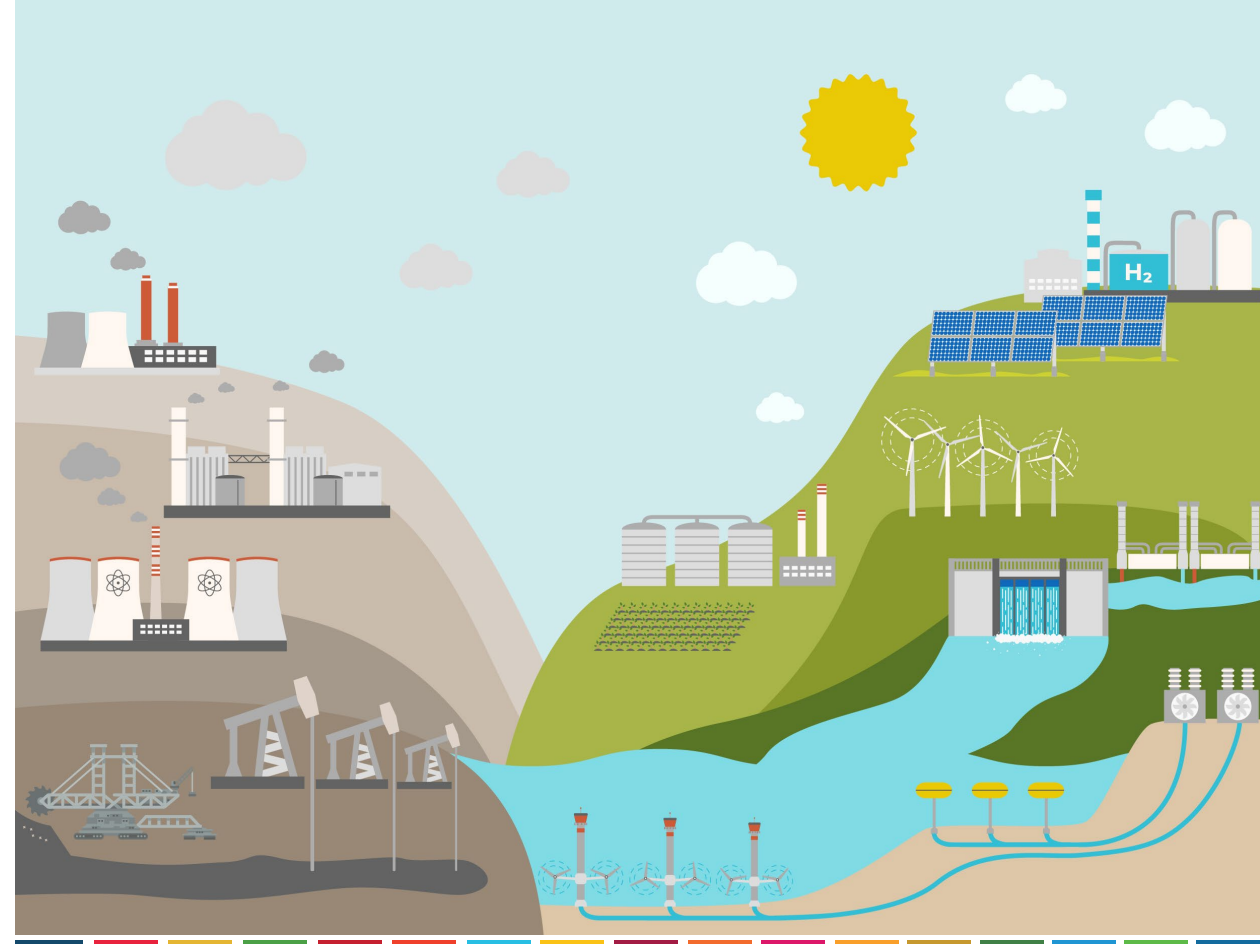
THE VIEWS EXPRESSED ARE THOSE OF THE AUTHOR AND DO NOT
NECESSARILY REFLECT THE VIEWS OF THE UNITED NATIONS.

Thank you!

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