



Update on the work of the OECD Task Force on the implementation of the SEEA-CF

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The OECD Green Growth Strategy

- Implementation of the SEEA-CF and data collection at the OECD are driven by the Green Growth (GG) Strategy.
- 6 GG headline indicators focusing on natural resource management (changes in land cover and land use, evolution of the natural asset base, contribution of natural resources to growth, non-energy material productivity) and air pollution (CO₂ productivity, population exposure to PM_{2.5}).
- Some important data gaps for the computation of these indicators:
 - Data at the industry level
 - Physical data for key stocks and flows of natural assets (e.g. mineral and energy resources)
 - Monetary values for key stocks and flows of natural assets
- Decision to create a dedicated Task Force (SEEA TF) in Sept. 2013 in order to help filling these data gaps and define a list of priorities for the implementation of the SEEA-CF at the OECD.



Mandate of the OECD Task Force on the implementation of the SEEA-CF

1. Advise the OECD and its member, accession and key partner countries on the compilation of national data according to the SEEA-CF
2. Facilitate the collection of internationally comparable data on air emissions and mineral/energy resources
 - Air emissions: data compilation building on work done by Eurostat
 - Mineral/energy resources: objective to compile stocks and flows in physical and monetary units, guidance on the use of unofficial data, guidance on valuation methodology.
3. Advise on other areas in which standard tables should be developed and on priorities to be set



Results achieved so far

Air emission accounts

A database on air emission accounts by industry is now available on the OECD website:

<http://stats.oecd.org/Index.aspx?DataSetCode=AEA>

- It follows SEEA guidelines (residence principle and harmonised industry classification).
- It covers all EU-OECD countries plus Australia, Canada, Norway, Switzerland and Turkey.
- It covers greenhouse gases (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆), sulphur oxydes (SO_x), nitrogen oxydes (NO_x), carbon monoxyde (CO), non-methane volatile organic compounds (VOC) and particulates (PM_{2.5}).



Results achieved so far

Physical stocks and flows of mineral and energy resources (1/6)

A database on physical stocks and flows of mineral and energy resources is now available:

- It covers 7 countries (Australia, Canada, the Netherlands, Norway, Mexico, the UK and the US) and up to 14 mineral and energy resources .
- It is only based on national data sources.
- Detailed metadata graphically show how national classifications relate to each other and to the classification of resources by advocated by the SEEA-CF.



Results achieved so far

Physical stocks and flows of mineral and energy resources (2/6)

Fundamental Characterization	CRIRSCO Template for Solid Mineral Classes	SPE-PRMS Classes	SPE-PRMS Sub-Classes		UNFC		UNFC G axis							
					Class	Sub-class	UNFC E axis	UNFC F axis	Proved Measured	Probable Indicated	Possible Inferred			
									1P/1C Low Estimate	/				
									2P/2C Best Estimate		/			
					3P/3C High Estimate									
Discovered and Commercially Recoverable	Mineral Reserves	Reserves	On Production		Commercial Projects	On Production	1	1.1	1	2	3			
			Approved for Development				Approved for Development	1	1.2	1	2	3		
			Justified for Development					Justified for Development	1	1.3	1	2	3	
Discovered and Not Commercially Recoverable	Mineral Resources	Contingent Resources	Development Pending		Potentially Commercial Projects	Development Pending	1.1		2.1	1	2	3		
			On Hold				Development On Hold	2	1.3	1	2	3		
			Unclarified or on Hold					Development Unclarified	2	2.1	1	2	3	
			Unclarified				Development Not Viable		3.2	1.3	1	2	3	
			Development not Viable						Development Not Viable	3.2	2.1	1	2	3
	Inventory (not defined in template)	Contingent Resources	Unrecoverable	Unrecoverable		Additional Quantities in Place	Development Not Viable	3.2		2.2	1	2	3	
				Unrecoverable				Development Not Viable		3.3	1.3	1	2	3
				Unrecoverable					Development Not Viable	3.3	2.1	1	2	3
				Unrecoverable				Development Not Viable		3.3	2.2	1	2	3
				Unrecoverable						Development Not Viable	3.3	2.3	1	2
Undiscovered	Exploration Results	Prospective Resources	Prospect		Exploration Projects	(No sub-classes defined)	3.2	3.1	4.1		4.2	4.3		
			Lead				3.2	3.2	4.1	4.2	4.3			
			Play				3.2	3.3	4.1	4.2	4.3			
	Unrecoverable		Unrecoverable		3.3	4	4.1	4.2	4.3					

SEEA-2012 Class A

SEEA-2012 Class B

SEEA-2012 Class C



Results achieved so far

Physical stocks and flows of mineral and energy resources (3/6)

Fundamental Characterization	CRIRSCO Template for Solid Mineral Classes	SPE-PRMS Classes	SPE-PRMS Sub-Classes		UNFC		UNFC E axis	UNFC F axis	UNFC G axis				
					Class	Sub-class			Proved Measured	Probable Indicated	Possible Inferred		
									1P/1C Low Estimate	2P/2C Best Estimate	3P/3C High Estimate		
									1	2	3		
Discovered and Commercially Recoverable	Mineral Reserves	Reserves	On Production		Commercial Projects	On Production	1	1.1	1	2	3		
			Approved for Development			Approved for Development	1	1.2	1	2	3		
			Justified for Development			Justified for Development	1	1.3	1	2	3		
Discovered and Not Commercially Recoverable	Mineral Resources	Contingent Resources	Development Pending		Potentially Commercial Projects	Development Pending	1.1	2.1	1	2	3		
			On Hold			Development On Hold	2	1.3	1	2	3		
						Development On Hold	2	2.1	1	2	3		
			Development Unclarified or on Hold	Unclarified	Non-Commercial Projects	Development Unclarified	3.2	1.3	1	2	3		
	Development Unclarified					3.2	2.1	1	2	3			
	Inventory (not defined in template)		Development not Viable		Non-Commercial Projects	Development Not Viable	3.2	2.2	1	2	3		
		Development Not Viable				3.3	1.3	1	2	3			
		Development Not Viable				3.3	2.1	1	2	3			
		Development Not Viable				3.3	2.2	1	2	3			
		Unrecoverable		Unrecoverable		Additional Quantities in Place	Unrecoverable	3.3	2.3	1	2	3	
Unrecoverable				Unrecoverable	3.3		4	1	2	3			
Exploration Results				Prospective Resources	Prospect		Exploration Projects	(No sub-classes defined)	3.2	3.1	4.1	4.2	4.3
					Lead				3.2	3.2	4.1	4.2	4.3
	Play	3.2	3.3		4.1	4.2			4.3				
		Unrecoverable				3.3	4	4.1	4.2	4.3			

Canada





Results achieved so far

Physical stocks and flows of mineral and energy resources (4/6)

Australia

Fundamental Characterization	CRIRSCO Template for Solid Mineral Classes	SPE-PRMS Classes	SPE-PRMS Sub-Classes		UNFC		UNFC E axis	UNFC F axis	UNFC G axis			
					Class	Sub-class			Proved Measured	Probable Indicated	Possible Inferred	
									1P/1C Low Estimate	2P/2C Best Estimate	3P/3C High Estimate	
Discovered and Commercially Recoverable	Mineral Reserves	Reserves	On Production		Commercial Projects	On Production	1	1.1	1	2	3	
			Approved for Development			Approved for Development	1	1.2	1	2	3	
			Justified for Development			Justified for Development	1	1.3	1	2	3	
Discovered and Not Commercially Recoverable	Mineral Resources	Contingent Resources	Development Pending		Potentially Commercial Projects	Development Pending	1.1	2.1	1	2	3	
			On Hold			Development On Hold	2	1.3	1	2	3	
			Development Unclarified or on Hold			Development Unclarified	3.2	1.3	1	2	3	
			Unclarified				3.2	2.1	1	2	3	
	Inventory (not defined in template)	Unrecoverable	Unrecoverable	Development not Viable		Non-Commercial Projects	Development Not Viable	3.3	1.3	1	2	3
							3.3	2.1	1	2	3	
							3.3	2.2	1	2	3	
							3.3	1.3	1	2	3	
							3.3	2.1	1	2	3	
							3.3	2.2	1	2	3	
Undiscovered	Exploration Results	Prospective Resources	Prospect		Exploration Projects	(No sub-classes defined)	3.2	3.1	4.1	4.2	4.3	
			Lead				3.2	3.2	4.1	4.2	4.3	
			Play				3.2	3.3	4.1	4.2	4.3	
			Unrecoverable				3.3	4	4.1	4.2	4.3	





Results achieved so far

Physical stocks and flows of mineral and energy resources (5/6)

Fundamental Characterization	CRIRSCO Template for Solid Mineral Classes	SPE-PRMS Classes	SPE-PRMS Sub-Classes		UNFC		UNFC E axis	UNFC F axis	UNFC G axis			
					Class	Sub-class			Proved Measured	Probable Indicated	Possible Inferred	
									1P/1C Low Estimate	2P/2C Best Estimate	3P/3C High Estimate	
Discovered and Commercially Recoverable	Mineral Reserves	Reserves	On Production		Commercial Projects	On Production	1	1.1	1	2	3	
			Approved for Development			Approved for Development	1	1.2	1	2	3	
			Justified for Development			Justified for Development	1	1.3	1	2	3	
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			On Hold			Development On Hold	2	1.3	1	2	3	
						Development On Hold	2	2.1	1	2	3	
			Development Unclarified or on Hold			Unclarified	Development Unclarified	3.2	1.3	1	2	3
	Development not Viable		Development Not Viable	3.2	2.1		1	2	3			
	Inventory (not defined in template)		Unrecoverable	Unrecoverable		Additional Quantities in Place	Development Not Viable	3.2	2.2	1	2	3
		Unrecoverable		Development Not Viable	3.3		1.3	1	2	3		
	Undiscovered	Exploration Results	Prospective Resources	Prospect		Exploration Projects	(No sub-classes defined)	3.2	3.1	4.1	4.2	4.3
				Lead			(No sub-classes defined)	3.2	3.2	4.1	4.2	4.3
				Play			(No sub-classes defined)	3.2	3.3	4.1	4.2	4.3
Unrecoverable		(No sub-classes defined)	3.3	4	4.1	4.2	4.3					



Norway



Results achieved so far

Physical stocks and flows of mineral and energy resources (6/6)

Main recommendations for the reporting of physical stocks and flows of mineral and energy resources:

- Stock data should not be limited to SEEA Class A (reserves). They should have the largest possible coverage in terms of discovered resource classes, i.e. SEEA Classes A, B and C.
- Since all resource classes may not be available for immediate extraction, we support the SEEA recommendation to compile separate accounts for the three classes of resources.
- The reporting of flows should not be limited to extraction flows. Discoveries and reappraisals (both upwards and downwards) should also be covered.
- To further improve international data comparability, we encourage countries to adjust their statistical reporting in such a way that SEEA classes can be fully covered.



Results achieved so far

Valuation of stocks of mineral and energy resources (1/3)

Main issue in practice:

Being able to compute Net Present Values (NPVs) of resource stocks, as advocated by economic theory and the SEEA. Note that the SEEA leaves ample latitude to countries for choosing how to forecast future resource rents and how to discount them.

Our starting point:

5 research priorities identified in 'Nature's Numbers' (1999):

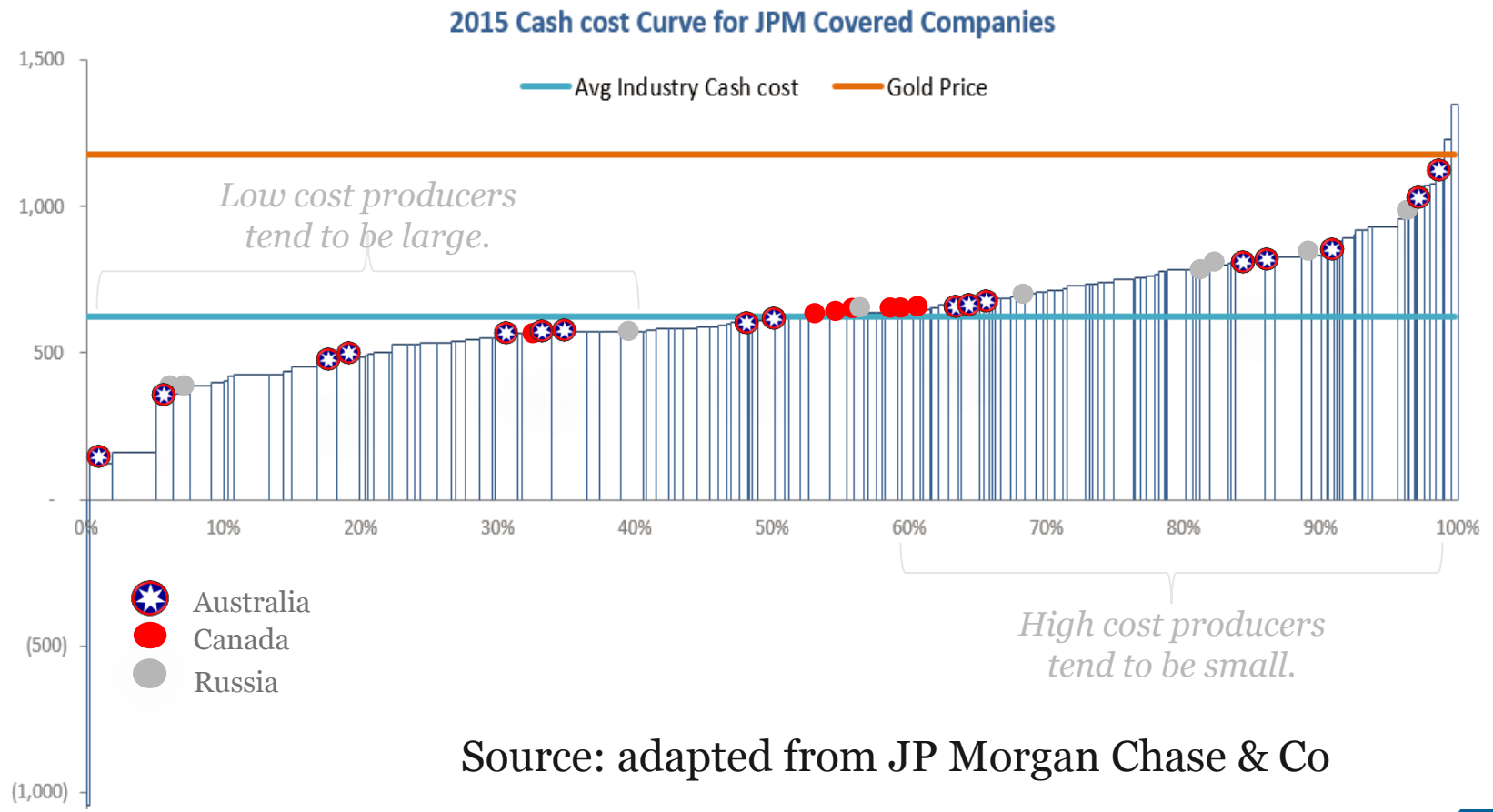
1. Value of mineral resources that are not reserves;
2. Impact of ore-reserve [and extraction cost] heterogeneity on valuation calculations;
3. Distorsions resulting from the constraints imposed on mineral production by associated capital;
4. Volatility in the value of mineral assets introduced by short-run price fluctuations;
5. Difference between the market and social values of subsoil mineral assets.
[not addressed by the SEEA TF]



Results achieved so far

Valuation of stocks of mineral and energy resources (2/3)

Heterogeneity between deposits: for a given commodity, extraction costs vary globally and also within countries, by a large extent. Need for accountants to take this into account.





Results achieved so far

Valuation of stocks of mineral and energy resources (3/3)

Main recommendations:

- Valuation at the mine/well level in order to (1) address the ore-grade and extraction-cost heterogeneity issues and (2) strengthen the assumption that future output follows an exogenous path.
- Take production constraints into account. For minerals, assuming that production remains constant, and for oil, that production declines exogenously, seems to be sensible.
- In order to disentangle the value of a natural deposit from the value of the fixed capital required for extraction, take advantage of the fact that national accounts already compute net capital stock values which, in equilibrium, are equal to the discounted value of future capital services.

Issues for further research:

- Accounting for uncertainty on the size of deposits for valuation (proposed methodology to be assessed with data).
- Valuation of undeveloped but known resources (option valuation techniques to be further investigated).



Priority areas for future OECD work

Criteria for identification

- Link to demands for evidence-based policy analysis and relevance for:
 - OECD Green Growth Strategy, SDGs
 - Environmental performance analysis
- Availability of statistics and possibility to link to already existing OECD data collection and production processes
- Comparative advantage and added value of OECD work:
 - areas not yet or insufficiently covered in other international work,
 - areas in which the multi-disciplinary nature of the OECD work is an advantage,



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