

Renewable Reserves Working Group Workshop

31 October – 1 November 2012, Norton Rose office, London

Contents

Key messages from workshop discussions	1
Summary of discussions in break-out groups	4
Next steps	7

Key messages from workshop discussions

Benefits of a renewable reserves methodology

Many benefits of a renewable reserves methodology were identified:

- Common platform of understanding and discussion for industry and policy makers
- Will assist in modelling how RE technologies will compete in the long term, (i.e. beyond 2035 and the current subsidy-driven environment for renewables): they will compete on how realistic those projects are
- For the finance community it provides a standardised mechanism for quantifying the size of different renewable energy projects, but not necessarily an assessment of *value* the different projects; in different economic times, RE will be valued in different ways. This is also the case for oil and gas reserve estimates.
- For companies with both RE and fossil fuels in their portfolio, it will assist in competition for internal resources and comparison on an “apples with apples” basis
- For governments it provides an opportunity to collect information and report on non-conventional reserves. It is also a mechanism by which organisations can communicate with governments in developing countries and demonstrate to them the value of their RE resources. It could also be potentially helpful for governments in making decisions regarding whether RE projects should receive support or not, and may also help provide consistent terminology and language in countries where the ministries of energy, minerals and mines are often combined.
- If the financial value of a company could be enhanced by classifying its reserves in this way, there would be a clear benefit to pure play RE companies. RE companies may also benefit from more informed policy and regulation and increased access to capital.
- There will be more and less sophisticated users of this methodology – the more sophisticated users will want to be able to break down the high level metrics and understand how they are generated, so a transparent methodology will be very important.
- Utilities: May be users of this methodology but unlikely to be “booking reserves” in the same way as project developers.

- Insurance: A credible methodology behind contingent resource calculations will be looked upon more favourably by the insurance industry

Choice of methodology

Key questions that were raised were: Is the UNFC the right methodology on which to base a renewable reserves methodology, or should we start with something new? Will one methodology meet the needs of all the different audiences?

It was generally agreed that the UNFC approach made sense as the different criteria on each axis are effectively already applied in RE project assessment, but standardising this process would bring more confidence in the results. All the “boxes” in the UNFC “cube” may not be required for all RE technologies – the three axes may be more or less relevant depending on the technology being assessed.

Consistency vs comparability

Developing a standardised approach for classifying renewables on a consistent basis should be the first step. Making the assessment comparable between renewables and fossil fuels is of less importance and should be considered later; aligning units across different sectors is not a priority, it is more important to explore whether a project is real or not.

Both rate and reserve figures are important and as for oil and gas, both should be reported. However, rate reporting is not part of a reserves methodology and there is a need to distinguish between appropriate reporting frameworks and a reserves methodology.

Transparency on the approach used for classifying renewable reserves and ensuring consistency within a particular sector will be critical, including providing clarity on assumptions made, etc.

In terms of differences with fossil fuels, two issues were identified but it was not clear whether they really posed a challenge to developing a renewable reserves methodology:

- Most forms of Renewable Reserves, unlike oil and gas, represent a future productive potential rather than potential energy in place, and hence do not “carry-over” if not exploited.
- Fossil fuel exists now, whereas a comparable amount of RE may take 25 years to produce. In other words, productive capacity can differ significantly between different reservoirs. This emphasises the need for rate reporting.

Unit of entitlement to resource

Although land (or area) is not always technically the resource itself, it is what provides access to the resource, whether it be wind, sun, crops etc. However, this is not the same for projects in which Municipal Solid Waste is the RE resource (e.g. MSW to biofuel). This is why it is important to assess on a project level – in some projects land may be the most appropriate unit of assessment, in others it will not.

Value vs Volume

Different volumes have different value, e.g. night time wind is not the same as day time wind. Energy storage makes renewable energy more valuable but is not energy in itself and a renewable reserves methodology could not be used to assess energy storage technologies.

Scale

There was a discussion around the importance of scale and whether there is a scale below which this methodology does not make sense. It was proposed that this methodology could be made sufficiently simple that project scale should not be an issue. However, it was highlighted that there would be a need to ensure that the associated costs with applying this methodology would not be a barrier to its use.

Point of measurement of the reserve: energy in or energy out?

For wind and solar it was quite clear that the point of measurement should be “energy out”, i.e. the electricity produced by the wind turbines.

For bioenergy, the situation is more complex as primary energy (energy in) and energy out are both possible potential reference points. There were a number of elements to the discussion:

- Need for consistency between renewables or indeed even within bioenergy itself?
- Significant differences in conversion efficiency of primary energy to energy supplied across bioenergy pathways, and hence a credibility and transparency issue.
- Is not the feedstock the resource, and hence the appropriate reference point? This would be more analogous with oil and gas.
- Where is the value in the bioenergy value chain? The primary reason for disclosure is to focus on the value held by a party. The rent in any bioenergy value chain could vary between feedstock, biofuel/biopower production, or even potentially land.
- If the concept of a renewable reserve is an assessment of future energy production potential, then arguably the focus of the methodology should be on the production plant, rather than the resource.

Who is eligible to book reserves?

The point of measurement and who is eligible to book reserves is not the same issue.

To be able to book reserves, a player needs to be able to demonstrate market connectivity and access to the reserve. There may be business models where it is not possible to book reserves at all as no-one can demonstrate both of these.

For bioenergy, leased land and dependency on 3rd party growers is very different to purchasing biomass from the spot market and a methodology should be clear on the treatment of these different feedstock resourcing arrangements.

Social licensing

Social licensing may be the single most important factor for moving from resources to proved reserves, and is an important element of the socio-economic assessment of a project.

Disclosure

It is not anticipated that there will be an obligation to disclose renewable reserves but there would be many other communication channels to promote this information such as in analyst presentations, information on websites, CSR reporting, in the first half of annual statements (if a non-SEC reporter). Financial reporting and what a company chooses to disclose are separate and should not be confused; the restrictions on the former should not limit company activity in this area.

Policy

Policy should be taken into consideration in the assessment for the location in which the project is situated. It should be made clear whether uncertainty of policy longevity is taken into consideration in the “G” or “Quantitative Uncertainty” axis assessment.

Plant lifetime

There is a need to build a database of RE technology component lifetimes analogous to that which exists for oil and gas, in order to make consistent estimates of plant lifetime.

Summary of discussions in break-out groups

Break-out group: Solar and Wind energy

The appropriate point of reserve measurement could be the earliest possible sales point of the electricity produced. The point of measurement may be different for different companies, it is just important that companies are explicit about the point of measurement. It does not need to be the actual point of sale, for example in an integrated business. The evaluation of the reserve should always come with a “date” at which that estimation was made.

It was agreed that only those generating the electricity should be able to book the resource; it is the companies that are taking the risk exposure that should have the right to book the resource. Utilities that buy electricity from the renewable power plants, while taking a risk, are users of the reserve information but are not parties that should be booking the reserve.

If energy is used in the process of generating electricity, it should be made clear whether that energy is being included within the reserve calculation or not. In the case of wind and solar it is likely to be very small but it should be reported separately and dealt with consistently across different types of renewables.

It was considered that lease or ownership of the renewable energy catchment area *and* permission to build (and other types of required permits) would be needed to demonstrate access and entitlement to the resource. A principle based approach demonstrating ‘reasonable certainty’ rather than a prescriptive based approach would be needed to demonstrate likelihood of lease renewal (i.e. which takes into consideration the context of the country in which operating).

To demonstrate market sales and connectivity, it would be important to demonstrate the lifetime of sales (e.g. likelihood of extension of supply contract or a reasonable assumption of price likely to be paid) and lifetime of plant (based on the physical conditions, the economic conditions and the lifetime of the permit to operate).

In terms of authorisation and commitment, it is important to consider the internal commitment to the project as well as the external commitment. For the former, there should be a need to prove “firm intent”; what this will involve will depend on the size and culture of the company, so the assessment of this criterion cannot be prescriptive.

Policy should be taken into account for the length of time over which it will exist and the quality of the resource needs to be taken into consideration in demonstrating the economic validity of the project.

It should be straightforward to set out criteria for deciding the status of the project and of feasibility studies.

Breakout group: Bioenergy

There was a great deal of discussion around the appropriate point of measurement of bioenergy reserves, i.e. energy in (biomass) vs energy out (biofuels, heat, electricity). The arguments for both are summarised below, and whilst there was a bias towards focusing on energy out, this issue remained unresolved:

Energy In	Energy Out
Comparable to crude/gas	Alternative uses of feedstocks and co-products
Availability of resource is important	High degree of variability of conversion of feedstock between different bioenergy routes
	Wide variability of feedstock types/quality
	Transparency and credibility
	Government perspective: energy supplied is key
	Incentive for technology improvement
	Comparability with other renewable energy sources, likely to choose energy out
	Where is the value created, values along the supply chain

Energy used in the process should be treated in line with oil and gas methodologies, but further clarity was required around the exact treatment within oil and gas methodologies. A point was made that the use of bioenergy for energy within the process was already captured in terms of a project’s economics/value. Inclusion of this bioenergy in a reserve calculation would in effect be a double counting.

A related question was raised on the treatment of embedded energy.

Non-energy co-products should be reported separately from energy related products and not combined.

In terms of access and entitlement to the land, demonstrating access is not the same as having the right to book the reserve. Land ownership models in some regions exclude land ownership/leasing, therefore spot/contract markets cannot be excluded. There was an emerging view that potentially two models existed, one where access to the resource could be demonstrated by access / entitlement to the land, the second by access to the feedstock itself – e.g. a particular agricultural commodity market. Both could be envisaged as potential “resources”. Both have risks in terms of demonstrating the longevity and/or certainty of access. For the first model, this could include access to the land (lease, equity) and harvest risk. In the second model, this could include risks around contractual terms, enforceability, and indeed previous record of being able to access the feedstock at an economically viable price (e.g. US corn ethanol plant shutdowns in 2007/8).

Lastly, it was felt that the requirement to demonstrate access to land must be appropriate and not encourage land grabbing.

Breakout group: Geothermal, hydropower and cross-cutting issues

There was general agreement that it should be possible to adapt the UNFC methodology to RE. However, the main challenge will be in determining the boundaries between classification “boxes”.

It is important to distinguish between ownership of the resource and the right to exploit it. The latter will determine the existence of a potential ‘project’.

A guideline on project lifetime could be the shortest of lease period or plant lifetime, unless a case can be made otherwise. Hydro projects can be very long (e.g. 70 years) but rate of production varies between projects. Therefore it is important to quantify the overall reserves and the rate of production (i.e. stock and flow) – these two key parameters are important across all RE types.

It was questioned whether renewables companies would be ‘transparent’ and experienced enough to quantify reserves properly? NB field-specific info is not disclosed in O&G. The RE sector does not have the same history of working with investors as O&G, which implies a role for verification/auditing.

It was discussed whether a project with reserves produced at a loss would be considered to have zero reserves under the methodology. It was concluded that in principle, they do still have reserves as the operator could delay production and earn later. However, it was agreed that financial regulators may calculate and assess this differently.

On the issue of which type of energy reserves should be booked in plants that can switch between different products, it was pointed out that some geothermal projects can switch output between heat and power in a manner analogous to a mill switching between bioethanol and sugar production, and also, that heat could be injected into a reservoir for later use. The general view was that the volumes of energy projected in the original project plan should form the basis of the reserve accounting.

It was noted again that energy storage (of any type) is not a reserve – it is an enabler of reserves production in a specific project.

There was also a debate around whether energy efficiency is a source of reserves i.e. if a project is created to save energy that would otherwise have been used, is this a 'reserve'? However, there was no clear resolution to this issue.

Next steps

There was consensus that there is momentum behind this Initiative and it needs to be maintained so that we can start using this methodology to efficiently allocate resources to renewables. Priorities in the next couple of months were identified as:

- Involvement of other stakeholders, through a working group focused on reaching out to those not yet involved
- Draft a generic renewables specification and circulate for comment, then move on to a specific RE specification
- Testing and pilots within the different industries; although this can be done at a preliminary level now, it can only be properly piloted when there is a specification drafted to test

More details on the way forward and a detailed action plan is proposed in a separate document that will be shared with all participants at the workshop.