Office of Gas and Electricity Markets

Cutting the Green Customer Confusion – Next Steps
(Published 21st November 2008)

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Organisation: BT Group

Annual Electricity Use: 2.2 TWh
(42% LEC-backed Renewable)
(56% LEC-backed Good Quality CHP)

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BTs Responses to the Questions Raised

Question 1:

Yes. BT believes that the provision of greater information will act to empower the consumer to make more informed decisions about their supply tariff; in-line with their own environmental preferences.

However the quality and the clarity of the information provided will also be fundamental to this.

If clear transparent information about the make-up and environmental impact of the electricity that a consumer procures, is provided to them; and if this information is of a quality/accuracy that allows for its validity [and for the exclusivity of any environmental &/or CO2 benefit] to be demonstrated – in a way that is consistent with the calculations of other metrics/methodologies [such as the Defra CO2 reporting guidelines, EU ETS data, etc] – then it will be possible for the consumer to trust this information.

Achieving this consumer trust in the information provided, combined with the availability of differentiated electricity products, will result in the generation of information indicating customer demand for renewable &/or low carbon sourced electricity.

Price Premiums:

In a supply constrained context (i.e. where consumer demand for renewable &/or low carbon electricity is greater than the available supply) the generation of information indicating customer demand will result in the development of a Willingness to Pay (WTP) – on the part of some consumers – of a price premium for ownership of renewable &/or low carbon electricity.

The charging of such a price premium should be considered allowable if:

1. There is reason to believe that the resulting market will exhibit Liquidity; &
2. The information, upon which this WTP is based, is publicly available, transparent, and auditable as exclusive (i.e. the carbon benefit is independently verified and is counted by one consumer only).

In other words: a price premium is justified only if the consumer knows what they are getting for the premium, and is willing to pay the premium to obtain ownership of it.

To increase the likelihood of a liquid market: the ability to purchase and hold certificates of carbon content should not be restricted to Suppliers; it should be open to all Electricity Consumers, and to interested third parties also.

Likely Magnitude of a Price Premium:

BT believes that a price premium for ownership of the Carbon Benefit from consumption of Low or Zero Carbon (LZC) electricity will ultimately approximate the cost of an equivalent quantity of EU ETS offsets [after adjusting for effects of the Climate Change Levy]. The Premium may exceed this value to a degree – due to factors such as a high WTP by some green domestic consumers. However organizations with voluntary CO2 targets will not be able to make a viable business case for purchasing LZC electricity if the cost of doing this is significantly higher than the alternative of purchasing EU ETS credits as offsets; this fact will essentially act as a price cap.

Consequence of a Demand-led Price Premium:

In a supply constrained market for Carbon Benefit: this Consumer Demand driven Price Premium should increase the marginal benefit of generating LZC electricity; applying downward pressure on the system wide CO2 intensity of UK electricity.

Question 2:

In a market with differentiated Low or Zero Carbon (LZC) electricity product offerings, no electricity consumer should report CO2 emissions, due to electricity consumption, on the basis of a national grid-average CO2 factor. A system in which this happens [as is currently the case in the UK] results in double counting of the Scope 2[1] Carbon Benefit of LZC electricity.

In order to prevent the occurrence of this double counting all consumers should be reporting CO2 emissions on the basis of either: a product differentiated CO2 factor; or a residual CO2 factor.

The guidelines, to be developed by Ofgem as an output from this consultation [along with the associated certification scheme] provide an opportunity to create a platform to solve this problem in the most elegant and practicable manner possible – whilst maintaining LZC electricity procurement as a means of contributing towards voluntary carbon reductions.

In order for the guidelines to provide this platform: carbon information should be provided for each individual product/tariff sold [rather than for the Suppliers overall Fuel Mix – as Fuel Mix Disclosure currently mandates]; and the minimum standard of carbon information required by the guidelines should be enhanced [compared to the current quality of carbon information provided by Fuel Mix Disclosure]. The Carbon information received by consumers – about the electricity tariff/product that they consume – should be of the same quality/granularity as the information generators hold for EU ETS compliance.

[1] The WRIs GHG Reporting Protocol defines three 'Scopes' under which to classify the carbon emissions for which an organisation is responsible. Scope 1 emissions are those for which a company is directly responsible; having, for example, directly combusted fossil fuel in a vehicle or generation plant. Scope 2 emissions are those indirectly emitted by the reporting organisation as a consequence of their consumption of electricity. These Scope 2 emissions will be the same emissions as the Scope 1 emissions of the generator; and are hence reported twice [indicating that the generator and the consumer share responsibility for these same emissions]. Scope 3 covers all other indirect emissions which an organisation's activities may have created further up the supply chain; the CO2 label now displayed on packets of Walkers Crisps shows the Scope 3 emissions that the individual purchaser of these crisps is responsible for.

Thus: the CO2 content of the electricity consumed (as provided to consumers under the guidelines) must be equal to the CO2 produced by generators [after adjusting for interconnector trades and the CO2 associated with transmission & distribution losses].

It may be appropriate for these guidelines to be a voluntary 'sign-up' in the first instance; however in order to ultimately solve the above-mentioned problem of the double counting of carbon benefit, the availability of granular evidence of CO2 quantity of all electricity generated in the UK must, at some level, be mandatory; and the methodology for company reporting of GHG emissions due to electricity consumption will need to be updated to align with the availability of this information. This may require actions by BERR and/or Defra that are supplementary to the scope of this consultation; however it is crucial that these Ofgem guidelines be compatible with this purpose in the first instance.

Question 3:

The guidelines for Renewable Tariffs, as currently drafted, are largely appropriate for non-domestic customers. However the guidelines for Low Carbon Supply Tariffs, as currently drafted, are not.

In procuring a Low Carbon electricity supply, the most fundamental objective of a non-domestic customer is to reduce the carbon emissions, due to their electricity consumption, that are reportable against voluntary CSR driven CO2 targets.

The draft guidelines propose a methodology, for calculating the CO2 intensity associated with a supply tariff/product, which is in accordance with the methodology of the Electricity (Fuel Mix Disclosure) Regulations 2005.

BT is not confident that the quality of CO2 information provided to the electricity consumer, by this methodology, will be of a quality that allows for its potential use in reporting of an electricity consuming organisation's CO2 footprint. If this

transpires to be the case: the guidelines on Low Carbon Supply will fail to be appropriate for non-domestic consumers.

A lack of consistency risks public miss-trust:

The reason BT lacks confidence in the quality of CO2 information that will be provided by the proposed methodology, is because the Fuel Mix Disclosure (FMD) data for the UK electricity mix, published on BERRs website, appears to be inconsistent with other published data on CO2 associated with UK electricity consumption [such as the emissions factors published in Defra's Company Reporting Guidelines for GHG Emissions]. We suspect that the reason for this inconsistency may be the lack of granularity of CO2 information in the FMD methodology.

BT proposes that the Guidelines on Low Carbon Supply require a methodology for the calculation, and provision to consumers, of CO2 information that is of a quality that will allow its use by electricity consuming organisations in reporting of their CO2 footprints; a methodology which provides CO2 information that is consistent with other UK CO2 data.

A need for actual CO2-intensity information at point of use:

In order to achieve this BT proposes that the CO2 information provided to consumers should be verifiable as equal to the CO2 information held by generators for EU ETS compliance [after appropriate adjustments]; and that it should be of a similar granularity.

BT proposes that certificates carrying actual CO2-content information be created at point of generation, and that these certificates act as a vehicle to transport this CO2 information to consumers.

BT proposes that a practical means of achieving this would be for certificates carrying this CO2-intensity information to be: created at generation, split from

physical supply, and traded on a separate market. This would work in a way roughly analogous to the workings of the ROC market; however the key differences between these Certificates of carbon-content and ROCs would be that: ROCs are concerned with the supply side, with additional environmental benefit, and with scope 1 emissions; Certificates of Carbon-Intensity would be concerned with Scope 2 emissions – on the demand side. Further: the cost premium of ROCs is driven by Government imposed obligation. Whereas any price premium for Certificates of Carbon-Intensity would be driven by a voluntary, demand-side, Willingness to Pay (WTP) on the part of consumers for ownership of the corresponding scope 2 emissions benefits.

Question 4:

If the problem, described above, around CO2 reporting is adequately resolved then the guidelines should prove useful to companies for CSR reporting purposes.

Ultimately it would be beneficial, for CSR reporting purposes, for companies to be able to display a form of the 'quality-mark' or label, as a representation of the quality of the electricity that they have consumed over a given period.

BT also feels that it should be noted here that inconsistency between the methodologies for calculating carbon that are promoted for different purposes by different areas of Government, provide a threat to CSR in terms of public trust; and thus to the marketability of CSR.

Question 5:

BT supports the development of 2 separate sets of guidelines: for tariffs sourced from renewable generation; and for tariffs sourced from low-carbon generation.

BT believes that a key part of this split ought to be a separation of: any additional environmental benefit encouraged; from the carbon content of the electricity consumed.

Further it is important that the Carbon Benefit of Renewably Sourced electricity is included as part of any measures of overall CO2 content of electricity. In other words BT believes that the following key pieces of information on a tariff should be provided to consumers:

- A label of CO2 content [which includes for the impact of both any renewable and any non-renewable LZC portions of the supply];
- An indication of the Fuel Mix of the tariff/product (suggest a small pie chart similar in design to the recent traffic light label for food content displayed on Sainsbury's products);
- A clear indication of any accredited Renewable content;
- A clear indication of any nuclear content (possibly including grams of waste); and
- An indication of whether there is any accredited Additional Environmental Benefit associated with the tariff/product.

Question 6:

Yes; it is appropriate for suppliers to provide information to customers regarding the contributions they are already making to Government sponsored environmental programmes. However, the primary concern should remain provision of information about what is in a consumer's actual supply – and the quality & transparency of this information.

Question 7:

Yes, information should be provided in a standardised format. See response to question 5 for key information that should be provided.

Question 8:

Yes. BT believes that the current practice of Fuel Mix Disclosure presents the best platform on which to build a system for accreditation of Low Carbon electricity (although see arguments elsewhere in this response for our view on the necessary quality of information).

The proposal to utilise the existing FMD categories of fuel type – with further sub-division of the renewable generation category – should be appropriate for determining the fuel mix of products/tariffs. However these categories should not be used to assign standardised CO2 information to these products/tariffs – actual CO2 information should be transmitted down the supply chain for this purpose.

Evidence of supply for determining the Fuel Mix, by % of each category of generation, should be provided in a way that is consistent with the parallel methodologies for tracking the carbon content, renewable content, and environmental benefit associated with a unit of electricity. One way of achieving this could be to include the category of generation source on the certificate of carbon content.

A standardised approach to tracking of all electricity attributes:

The EU funded E-TRACK project has been developed as a standard for the tracking of electricity attributes. It proposes a single certificate – separated from physical electricity at point of generation – to act as a vehicle for all types of quality information relating to a unit of electricity[2].

[2] Including: Fuel Source; Emissions; Support Granted, etc.

This kind of multi-purpose certificate could be used as a vehicle for all the information required by the Low Carbon and Renewable Accreditation proposed here; including:

- CO2 intensity (tCO2/MWh);
- Category of generation technology;
- Whether the electricity is REGO backed;
- Grams of high level radioactive waste per MWh; &
- Whether there is an Additional Environmental Benefit associated with this unit of electricity.

Such a label could also be used to aid overall transparency by tracking, &/or carrying, other quality information/evidence; such as:

- Whether electricity is LEC backed (including LEC reference number); &
- Whether electricity is ROC backed (including ROC reference number).

The E-TRAK project estimates that the costs of implementing such a tracking system would add between 0.01% and 0.1% to the current price of electricity for final consumers; corresponding to between EUR 0,01 and EUR 0,38 per year for an average European household.

BT believes that adopting the E-TRAK standard, for the purpose of tracking all attributes of each unit of electricity generated in the UK, would go a long-way towards both: preventing the risk of double counting of benefits, and improving trust in the electricity attribute information that is available.

Question 9:

Yes, LECs should be provided by Suppliers in respect of renewable or low carbon tariffs where available.

BT is strongly of the opinion that Suppliers should not be able to withhold, from consumers, the provision of such evidence of supply quality. Consumers should have a right to know where their electricity comes from [particularly when evidence of this exists], and suppliers should provide the appropriate evidence to consumers, upon request[3]. Evidence of supply source/quality should be apportioned on a MWh basis to various tariffs/businesses – and not held in aggregated obscurity by suppliers for fear of all consumers wanting ownership of the best bits.

This 'smoke and mirrors' approach to information provision is a key reason for the lack of transparency – and consequently trust – that is endemic in the current situation.

Question 10:

BT does not possess adequate information to provide a definitive answer to this question.

Question 11:

BT believes that the most pragmatic way to approach the complex, somewhat abstract, and occasionally emotive, question of 'Additionality', is from a perspective of: financial premiums, and ownership.

As Ofgem correctly identifies, a significant part of the issue in this area is a question of: how a system for accreditation of high-quality differentiated electricity products – take up of which will depend on voluntary/altruistic demand – can be workable in the context of an electricity system in which mandatory obligations must be met.

[3] Although if the consumer would rather their Supplier holds the LECs on their behalf then this should remain possible – provided consumers can obtain, upon request, for any reporting/audit period, the relevant evidence relating to their supply contract, or the relevant information pertaining to the evidence to back up the supply tariff which they purchase.

By clearly defining – and transparently demonstrating – who has or has not paid for ownership of the various qualities of each MWh of electricity, this problem of the interface between the Mandated and the Voluntary should become tractable.

Both the Renewable Obligation (RO) and the Energy Efficiency Commitment (EEC) place obligations upon suppliers which are funded by passing through a levelized 'Cost Premium', to all consumers, on each MWh purchased. Payment of this mandatory premium entitles the consumer to ownership of a characteristic or quality which its payment has created in the electricity consumed.

Clear definition, of exactly which characteristics and qualities the average consumer is entitled to ownership of, as a result of their payment of these Cost Premiums, will draw a clear and practicable boundary between the Mandatory and the Voluntary; identifying the qualities which are not available for Voluntary ownership by consumers.

What does paying for the RO buy for the average consumer?
In the case of the RO, we believe that the Cost Premium that is paid entitles the UK, on behalf of the average consumer, to ownership of the following:

- The 'Additional Benefit' [over that which would have occurred in the absence of the obligation] associated with a marginal quantity of additional new renewable generation capacity; including:
    - The associated 'Additional Environmental Benefit'; and
    - Any other associated benefits.
- The 'Scope 1' carbon saving associated with 'Generation' of a unit of zero carbon electricity[4]; generation which substitutes for generation which

[4] Note that this 'Scope 1' carbon benefit cannot be used by consumers for the purposes of carbon footprint calculations. Though paid for by consumers; it is effectively a nationalized commodity that is held by the UK Government towards the meeting of UK CO2 targets.

would otherwise have resulted in direct CO2 emissions from fossil fuel combustion.

But we do not believe that the Cost Premium paid by the average consumer should provide an entitlement to ownership of:

- The 'Scope 2' carbon saving[5] associated with 'Consumption' of a unit of zero carbon electricity; consumption which substitutes for consumption of a unit of carbon intensive electricity.

Marrying the Mandatory RO to the Voluntary demand for LZC electricity:
We believe that it would be a mistake to include these Scope 2 emissions in the package of characteristics whose ownership has been paid for as part of the Cost Premium resulting from the RO. This is because by taking this approach, the zero carbon quality of renewable electricity would essentially be precluded from inclusion as a differentiating quality of any low carbon tariff – its ownership would already be held by the UK Government on behalf of the average consumer.

This essentially defeats the object of a Low Carbon Tariff (or, to be more precise, removes Renewables from the equation); which is to identify and encourage consumer demand for units of electricity which possess the quality of being Low Carbon.

In order for a consumer to voluntarily demand a quality in the electricity that they consume, they must be able to obtain ownership of that quality. Thus the Scope 2 carbon benefit of a unit of Low or Zero Carbon electricity [including that which

[5] Note: - this splitting of the carbon benefit of a single unit of LZC electricity, into a Scope 1 and a Scope 2 portion, may seem somewhat abstract. However it should not be viewed as double counting. Splitting the carbon-benefit is in fact the only way in which it can be accounted for in a way that is consistent with the standard view on assignment of responsibility for a unit of emitted carbon; that is that both generator and consumer of electricity are responsible. If emitting carbon creates responsibility on both the Supply and the Demand sides of the electricity market; saving that carbon must apportion benefit on both the Supply and the Demand sides of the market.

was renewably sourced under the RO] should be available for ownership by consumers. And provided it is transparently the case that this ownership is exclusively available, and that there is likely to be an adequate degree of liquidity[6] in the market for this ownership, it should be acceptable for a 'Price Premium' to be paid on the basis of consumer-demand-driven Willingness to Pay (WTP).

Paying both a Price Premium and a Cost Premium on the same unit of electricity:
This 'Price Premium' would be voluntarily paid in addition to the 'Cost Premium' of the RO. However this would not mean – as is suggested on page 17 of the consultation document – that the consumer has paid double for the renewable generation. Rather: the consumer will have paid for ownership of 2 separate attributes of the renewable generation: firstly [through the RO Cost Premium] for the additional benefit of a marginal quantity of new renewable generation capacity [including the Scope 1 carbon benefit of zero carbon generation]; and secondly [through a voluntary, WTP based, Price Premium] for the scope 2 carbon benefit.

Who gets paid the Price Premium?
BT believes that such a 'Price Premium', for ownership of the Scope 2 carbon-benefit of a unit of electricity, would [in a properly transparent market] ultimately be paid to generators – in addition to any ROC revenue they receive – as a reward for generation of low carbon electricity. This should ultimately provide downward pressure on the overall CO2 intensity of the UK electricity mix; by improving the economic competitiveness of both: operating existing low & zero carbon generation; and of investing in new low & zero carbon generation.

[6] To encourage liquidity: the market for evidence of carbon benefit should be open for direct participation by consumers and third parties, rather than available only for participation by suppliers.

Accreditation of products offering Additional Environmental Benefit:

Once the benefits of existing Government obligations are clearly defined, BT believes that suppliers should be able to provide products for which environmental benefits, which can be verified as additional to those mandated by Government obligations, are associated.

Similarly to the accreditation of Low Carbon Supplies, evidence of these claims should be transparent, and verified by a third party, so that consumers can have sufficient confidence in the claims to support the development of appropriate price premiums.

Question 12:

Yes, BT believes that either alternatives – relating to 100%, or a stated %, of Renewable content – are appropriate for renewable tariffs.

In the context of the wider information provided by detailing the fuel mix of tariffs/products, and the provision of carbon content information, it may be appropriate to adopt the more stringent 100% requirement here.

Question 13:

Yes. It is appropriate to rate supply tariffs by their carbon intensity so as to allow consumers to make at-a-glance comparisons of the different supply tariffs/products offered by each supplier.

Question 14:

Each MWh of electricity generated should be matched – at point of generation – with a certificate of its carbon content. This could be done in aggregation, over a period of 1 year, for each generator[7]; but the generator could 'borrow' certificates, so as to be able to sell them in advance of settlement, provided that

[7] I.e. if a generator produces X MWh over a one year period, and emits Y tCO2 over the same period; X certificates of a CO2 content of Y/X tCO2/MWh would be produced. Thus each MWh generated in that period is matched with a certificate of carbon content.

they match all borrowed certificates, at settlement, with actual certificates for that period.

Collection of the required data largely already occurs; combustion plant collects it for EU ETS compliance; and REGOs represent zero carbon renewable electricity. However the standardisation [across all types of generation – including a standardised approach to interconnector trades] of collection and transparency of this information should be a minimum mandatory requirement. This is needed so that the carbon content of each and every MWh of electricity generated in the UK is robustly known – based upon actual CO2 data – by the 3rd party certification body.

Calculation of the CO2-intensity of electricity at point of use:
Provided that the carbon-content of each MWh is transparently accounted for at generation, it should be possible to calculate – ex-post – the emission intensity of any consumed electricity which was not backed by evidence at the point of sale. In other words: once all evidence-backed electricity consumption has undergone 3rd party verification [at the end of each 1 year period], the 3rd party certification body should determine the MWh and tCO2 which have been accounted for by evidence at point of sale, and calculate from this the carbon content of any residual electricity – which has not been backed by evidence of CO2 content at point of sale.

This process is similar to the current methodology for dealing with the residual mix in Fuel Mix Disclosure. The key difference being that it must require the use of actual CO2 data – rather than standardised emission factors – to determine the CO2 intensity at point of generation.

Calculation of a CO2-intensity for Residual Electricity at point of use:
Assuming that the above processes are in place, the appropriate treatment for electricity that is not supported [at point of sale/consumption] by evidence of CO2

content, is for it to be assigned a residual CO2 content by the 3rd party certification body at settlement. Thus any tariff/product which is not wholly backed by evidence of CO2 content, will have its CO2 content 'settled' after 'verification' in the same way that wholly backed tariffs/products will; the difference being that, prior to settlement, there will be a degree of uncertainty regarding the final CO2 content of products/tariffs which contain residual electricity.

Question 15:

No it is not appropriate to calculate carbon intensity using standardised emission factors at the point of generation. This is likely to result in the emissions information provided to the consumer being inconsistent with other sources of emissions data; and hence being inappropriate for use in CO2 footprint calculations – see response to question 3 above.

It may be appropriate to use some form of standardised emissions data for the purpose of forward selling an electricity tariff, in advance of the consumption/audit period (Note:- an alternative to this would be to forward sell on the basis of historical data). However the accurate CO2/MWh content information for a [1 year?] audit period would need to be 'settled' and provided to consumers following 3rd party verification at the end of the audit period.

Question 16:

If the emissions sequestered by carbon capture and storage (CCS) technology are appropriately verified, and if sequestration is – and is commonly recognised as – a valid means of emissions reduction; then the carbon-intensity of CCS electricity should reflect this. If these tests are not met, then CCS should not count as low carbon; and the emissions sequestered by CCS should be included in the emission intensity of such electricity.

In either case, the fuel mix disclosed for a product/tariff should detail the proportion of supply that has been sourced from CCS generation (i.e. CCS should represent one or more divisions/sub-divisions of the fuel mix information disclosed for products/tariffs).

Question 17:

The illustrative bandings presented in the consultation do appear appropriate. Bandings of this type should be utilised, by suppliers, to sell products/tariffs in advance of actual consumption – and final settlement of carbon-content. But the final calculation of carbon content should utilise actual CO2 emissions data.

It is important that low carbon electricity of a nuclear origin be clearly indicated as such on the label/bandings of products/tariffs. BT suggests that a 'mark' indicating whether or not a tariff/product is 'Nuclear-free' should be clearly displayed as part of the overall electricity label. Further: information on the grams of High-Level Nuclear Waste, produced in generating each MWh of the product/tariff (analogous to current practice in FMD; but extended to product/tariff level), should be presented on the label – either as a discreet value alone, or as a discreet value accompanied by a graphical A-F banding for nuclear waste content.

Ultimately BT believes that a label based upon these bandings could be used by companies to display – for CSR purposes – the overall CO2 content [and wider environmental impact] of all the electricity that they have consumed in a given period. In doing so, BT believes that they should display the same or similar information as suppliers will display regarding domestic tariffs. In other words certification of Low Carbon Consumption (&/or of Renewable Consumption, etc) should ultimately be available to Electricity consumers, in the same way – and displayed in the same/similar standardised format – as it is for domestic tariffs under the final guidelines.

Question 18:

The bands should be set and/or reviewed by an independent body.

Question 19:

Yes the bands should be adjusted over time. One of the drivers of this could be to reflect a requirement to continually reduce carbon-intensity of UK electricity up to 2020, 2050, & beyond, [in line with Government Targets]; however further drivers could also be considered.

According to Defra's guidelines for company reporting of green house gas emissions, the average CO2 emissions from consumption of a MWh of UK electricity, over the last 5 years, has been 523g CO2. Under the currently proposed banding this places the CO2 content of the average MWh of UK electricity approximately at the boundary of bands D & E; resulting in 2 bands that are worse than the average, and 4 bands which are better. Another sensible driver to setting/adjusting the bandings could be to maintain the D/E boundary as approximate to the UK average.

The key factor here will be to maintain a level of banding granularity that allows consumers to differentiate appropriately – particularly at the low carbon end of the scale.

Question 20:

BT agrees in principle with Ofgems proposals to progress compliance with a final set of guidelines and the development of the accreditation scheme(s).

BT remains concerned however that there is a lack of joined-up thinking among Ofgem, Defra, and others, as to how to maintain consistency between different measures and metrics for calculation of carbon-intensity of consumed electricity. BT is concerned that this may ultimately lead to a brake-down of consumer trust

in CO2 information that has been calculated by organisations that have, in good faith, applied the rules of one or more of these methodologies.