PS23417 - Time of Use Tariff - Consultancy Procurement Specification

1. Purpose of document

This document sets out the requirements for external technical expertise on stakeholder engagement on preferred options for exchanging interoperable energy tariff information. As per the "Delivering a smart and secure electricity system: the interoperability and cyber security of energy smart appliances and remote load control" consultation[1], appliances like electric vehicle charge points and heat pumps have high potential to provide flexibility through Demand Side Response (DSR). While they will increase demand for electricity, these appliances and others can deliver DSR by changing when electricity is used or produced, to minimise their impact on the energy system. As markets for such appliances continue to grow, new business models and services will emerge whereby companies remotely manage consumers' energy smart appliances according to consumer preferences, to reduce impact on the energy system and subsequently reduce consumer bills. In addition, appliances will be able to optimise energy usage, while also ensuring consumers' needs are met. For example, an electric vehicle smart charge point can be programmed to ensure that a consumer's car is charged when they need it, but it can also optimise when the car charges to minimise the energy system impact. This will allow DSR to be delivered 'behind the scenes' for consumers, ensuring they still get the same or better service but at lower costs and while retaining choice and control.

We are seeing some of these services coming to market now. For example, EV owners can subscribe to services where they get discounts, rewards or cash-back for letting a third party dynamically control when their car is charged. Some energy suppliers are offering sophisticated time-of-use tariffs that change the price of energy depending on when it is used. Whilst these services are not being offered on a large scale now, the scale of uptake in DSR and ESAs by domestic and small non-domestic consumers has the potential to increase significantly in the future.

However, there are currently barriers to the growth of this sector. Not all tariffs and services are available for all devices, and there are limited consumer protections to build confidence in the market. To ensure we are prepared for the future, the Government is proposing to implement measures to ensure domestic consumers who choose to use DSR services, are able to get the most benefits from doing so, irrespective of the kind of smart appliance and service they choose. These will also help address the current barriers and market failures that prevent more UK businesses from maximising the potential of DSR for their own growth and for the wider economy.

[1] https://www.gov.uk/government/consultations/delivering-a-smart-and-secure-electricity-system-the-interoperability-and-cyber-security-of-energy-smart-appliances-and-remote-load-control

2. Introduction and background

As per the Government response to the 2022 consultation on interoperability and cyber security of energy smart appliances and remote load control "Delivering a smart and secure electricity system" [2] the Government intends to require energy suppliers to make time-of-use tariff data openly available in a common format, over the internet.

The full details of how this proposal will be delivered are being developed at the moment, but initial thinking is for:

- The tariff information from all suppliers to be made available in a secure, consistent, open, machine-readable, interoperable format via the internet, and be free of charge.
- The scope to include all electricity and gas tariffs, for domestic and smaller non-domestic consumers (with possibility for carve-outs as required and justified). Tariff history and energy consumption history would not be considered within scope.
- The data provided to be primarily intended for optimisation services to consumers' energy smart appliances. Data could be provided directly to devices to provide local optimisation, or to an optimisation organisation's platform to allow that platform to send optimisation instructions on to devices.

Previous work has identified:

- User needs for this data.
- A "minimum viable product" (MVP) set of tariff data items required to meet these user needs (i.e., the beginnings of a data schema).
- A suite of technical options to deliver this data in an open, machine-readable, interoperable format via the internet or smart meter network.
- Evaluation on deliverability, risks, rough order of magnitude costs, and how well each option meets user needs.
- Two leading options: data being delivered by supplier-hosted APIs, which might be via a) a standardised API schema across all suppliers, or b) a government provided list of data items it must include, but with the schema left unstandardised.

A Government-lead industry working group (Tariff Interoperability Working Group) is considering the development of the above options and data standard in further detail.

The focus initially is on a simple MVP – a simple minimum set of agreed data items provided via a simple API based mechanism. We would like to test this MVP on energy suppliers and other relevant stakeholders, who ultimately will be key to delivery, in terms of timescales, costs and delivery options.

Once the MVP is agreed, we are proposing that the standardised GB tariff API schema is housed in an industry code, most likely the Retail Energy Code (REC).

Following on from the development of this MVP standardised GB tariff API schema, we are also considering further technical expansions that might advance the policy or become needed in future to accommodate more advanced tariff types. This phased approach would allow suppliers to bring the MVP data to market quickly, and then allow flexibility for how the technical standard advances to accommodate changes in the tariff market. Technical expansions include, for example, if it should be possible for a consumer to authenticate themselves and receive the details of their own tariff and associated contract

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147855/smart-secure-energy-system-government-response.pdf

dates. Other items which have been identified as potential useful expansions would be standardisation of additional and optional data items beyond the MVP data item spec (for example, supplier specific carbon intensity), and inclusion of event driven architecture, which would allow the creation of real time updates to tariff information. Our initial view is that a working group made up of industry would input on this roadmap of future development, but alterations to the agreed MVP standardised GB tariff API schema would be taken forward via a modification process in the REC.

3. Contract requirements

1) Conduct stakeholder engagement with energy suppliers and other relevant market participants on the leading two options in terms of:
    a. Scale (cost and time) of technical and non-technical work for different suppliers to develop the API (either to a standardised schema or a non-standardised one). This should probe scale of both the back-end and the front-end work.
    b. Whether any centralised cryptographic arrangements will be needed to support the arrangements– for example to allow consumers of the data to verify the authenticity and integrity of the information. It will have a material bearing on what we might need to write in the REC.
    c. Preferences on if there should be any standardisation of the API schema.
    d. Views on the necessity of the proposed roadmap, namely authentication, additional data items or technology to underpin real-time tariff updates.
    e. Views on any relevant international standards
    f. Views on next steps e.g., the potential role of the Tariff Interoperability Working Group (TIWG) to draft standards, use of the Retail Energy Code to house the agreed standard, modification process to that standard, etc.

2) Create an independent cost and time estimate for small energy supplier to contract out the development of a tariff API. This could be a) to a standardised schema or b) a non-standardised schema. This should take into account scale of both the back end and the front-end work, as also informed by the stakeholder engagement described above.
    a. This will represent an “independent view” during the TIWG discussions, to help assure that cost estimates being brought by energy suppliers are reasonable/accurate. Assumptions made about costs will need to be documented and may be shared with other energy suppliers more broadly.
3) Provide a view on if there are international standards which the GB API tariff could align with. Once example of this would be OpenADR3.
4) Building on the GDS technical and data standards[3], provide the department with best practice guidance on non-functional requirements for the GB Tariff API, including requirements on security, uptime, capacity, and versioning. This will inform the departments position during TIWG meetings**.**

5) Develop options for the regulator Ofgem to conduct assurance on the APIs being offered, i.e., technically verify that energy suppliers APIs are meeting:
    a. The API schema standard

[3] https://www.gov.uk/guidance/gds-api-technical-and-data-standards

b. Non-functional requirements like uptime and security
c. Requirements on keeping the API data accurate and up to date.
d. This assurance could range from a low-tech solution (a central email for consumers to submit issues which would be raised as infractions to energy suppliers), mystery shoppers checking that an energy supplier's API is working as required, to automated monitoring of the API.

4. Ways of working

We expect the procured expertise:

- to develop a detailed project plan alongside the project team, setting out clear milestones whilst maintaining flexibility to changing priorities over the work period
- to be integrated into the project team, attending relevant team meetings and work sessions
- to approach the work in an Agile manner, producing a steady flow of outputs throughout the course of the contract
- to upskill team members where appropriate
- to make use of their external contacts network and facilitate external stakeholder engagement (pre-agreed with DESNZ)
- To interact with other relevant projects as required (especially associated projects on; interoperability and security architectures; and communications modelling)

5. Timescales and Deliverables

We are seeking to procure this expertise from January 2024 until the conclusion of the project.

The output of the work should take the form of a preliminary report to officials setting out the analysis and making recommendations on how each of the above issues should be resolved.

Following discussion of the preliminary report, a final report should be produced taking into account the Department's comments. The final report should be in a format that is suitable for forming the basis for a public consultation on the recommendations.

The main deliverable will be a short form Word style report (10-20 pages) setting out findings against the work detailed in Section 3 above. DESNZ may use this content as input into DESNZ documents and reports. We expect an interim report, before the 29th March 2024.

6. Experience required of service provider

Essential:

- Energy sector, including market.
- Smart energy system
- Data service expertise
- Knowledge of relevant standards
- Qualitative analysis
- Experience/knowledge of interoperability in energy context
- Knowledge of RESTful API development

7. Supplier selection / bid evaluation

- Bidders should clearly set out their phasing of inputs and detail costs, broken down by output in line with the phasing and commensurate division of effort set out in this RfP. Total cost should not exceed £30k-50k excluding VAT.
- Please structure your bid as follows:
    - Introduction - comprising a statement of relevant organisation experience and demonstrating understanding of the objectives and policy environment.
    - Methodology – please set out the methodology used to meet the requirements, including details of any external stakeholder input required.
    - Team overview and key points of contact
    - Costings, broken down by output, number of days of proposed individuals, and day rates.
    - Annex: summary CVs of key team members (not scored)
- In evaluating the bids, DESNZ will consider the following:
    - Understanding the Environment (20%)
    - Approach and Methodology (25%)
    - Staff to Deliver & Risk Management (15%)
    - Project Plan, Timescales and Quality Assurance (10%)
    - Social Value the commitment(s) their organisation will make (10%)
    - Cost (20%)