DSO

Flexible Power Portal Dispatch API Workshop

10th May 2024

nationalgrid

We'll be recording this Workshop

Questions can be added to the chat/Q&A at any time

There will also be plenty of opportunity for you to ask questions or share your views during the course of the Workshop

We'll share these slides after the Workshop

NGEDs Flexibility Team can be contacted via email;
nged.flexiblepower@nationalgrid.co.uk

Introductions

Helen Sawdon	Flexibility Commercial Manager	National Grid Electricity Distribution DSO
Rebecca Hassall-Lees	Project Manager	Electralink
Tung Mac	Lead Developer	New Flexibility Technologies (NFT)

Agenda

01	**Background** • Flexible Power and Electralink • The need for changes to the API • How this aligns with the ENAs work
02	**Overview of the new Flexibility Products** • ENA flex products • How NGED will be rolling them out
03	**Flexible Power Dispatch API** • What this looks like now • What changes we are proposing • Impact of changes • Discussion
04	**Next steps** • Timeline for change implementation • Further communication

DSO

1

Background

nationalgrid

Flexible Power & Electralink

Market Operations Platform which facilitates the declaration, acceptance, scheduling, dispatch, verification and settlement of flexibility services.

- First established by NGED through an innovation trial in 2017 in partnership with Kiwi Power
- Rolled out for BAU Flexibility Market Operations by NGED in 2018
- In 2020 three further DNOs, SSEN, SPEN & NPg partnered with NGED to begin using Flexible Power for their own Flexibility Market operations
- Since 2023, Electralink and NFT have been maintaining, testing and developing the platform

The need for changes to the API

- DNO flexibility markets are growing; these changes will help facilitate scale and increase efficiency
- DNO standardisation driven by Open Networks; more effective implementation of the new standardised flexibility products
- Changes include;
  - Enabling simultaneous dispatches
  - Inclusion of a Start & Stop time
  - Inclusion of required Power Change
  - Additional Notice instruction
  - Single URL for all instructions
  - Inclusion of a Dispatch ID

Alignment with ENA dispatch interoperability Working Group

Over 2023 and 2024, the ENAs Open Networks Project has been looking at best practice and options for standardising the dispatch API used by market platforms to instruct flexibility.

It was agreed earlier this year that such standardisation is complex and that the working group should seek a good and practical solution for alignment that can endure, acknowledging that this would take additional time.

Its now expected that the working group will complete its assessment and make recommendations for dispatch API alignment post Q4 of 2024.

Ahead of that, and with the adoption of the new flexibility products, NGED are seeking to create an interim V2 API that will allow us to rollout some changes sooner, which align with best practice identified by the ENA, while also maintaining the existing V1 API for providers that do not wish to change. We'll launch a V3 in the future to meet the ENA recommendations once they are completed.

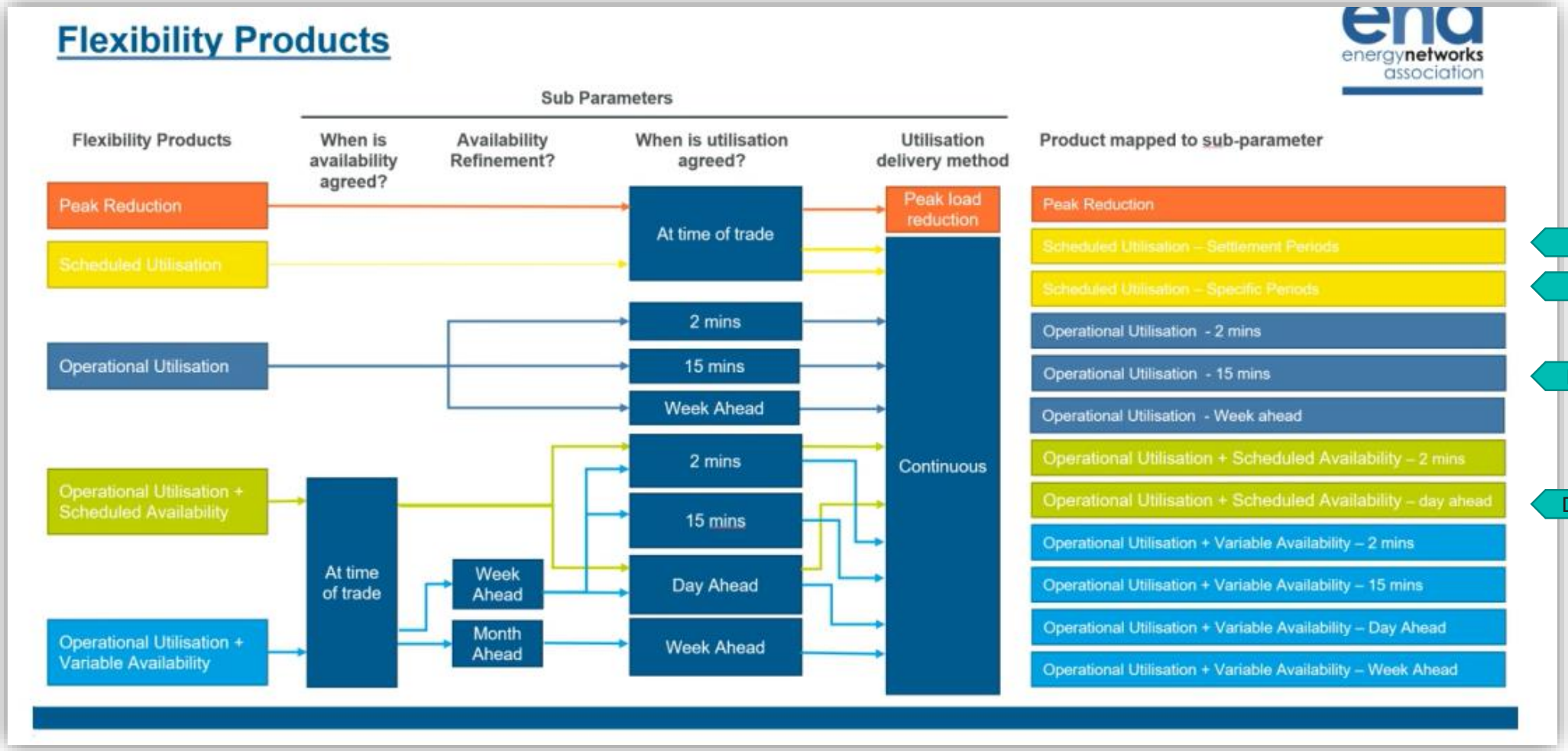
DSO

2

Overview of new Flexibility Products

nationalgrid

The new ENA Flexibility Products



*NGEDs product Mapping

NGEDs Approach to rolling out new products

Existing Product	Attributes	Dispatch Instruction	Future Product	Attributes	Dispatch Instruction
DYNAMIC	Scheduled Availability, Utilisation instructed in realtime	15mins ahead of delivery start	**SAOU_DA** Scheduled Availability, Operational Utilisation – Day Ahead	Scheduled Availability, Utilisation instructed day ahead	Day ahead at 13:30, same time every day
SECURE	Scheduled Availability, Utilisation instructed in realtime	15mins ahead of delivery start	**SU_SEP** Scheduled Utilisation - Settlement Periods	Utilisation Only, API instruction optional	Every Thurs 14:00 ahead of delivery week
SUSTAIN	Scheduled Utilisation Only. API instruction optional	15mins ahead of delivery start	**SU_SPP** Scheduled Utilisation - Specific Periods	Scheduled Utilisation Only, API instruction optional	Every Thurs 14:00 ahead of delivery week
RESTORE	Utilisation Only. Utilisation instructed in realtime	In real-time	**OU_15** Operational Utilisation – 15min	Utilisation Only. Utilisation instructed in realtime	15mins ahead of delivery start

Future Products are not directly equivalent – parameters are different.

Any Trades Awarded on current products will remain unchanged.

DSO

3

Flexible Power Dispatch API

nationalgrid

DistributionSystemOperator

V1 & V2 API Parameters – proposed (NGED Products)

				Dynamic	Secure	Sustain	Restore	Scheduled Availability, Operational Utilisation – Day Ahead	Scheduled Utilisation, Utilisation Only - Settlement Periods	Scheduled Utilisation, Utilisation Only - Specific Periods	Operational Utilisation, Utilisation Only - 15min Response
			Realtime dispatch?	Yes	Yes	No	No	No	No	No	Yes
			Subject to daily email?	No	Yes	No	No	Yes	Yes	Yes	No
			Dispatch Signal Optional?	No	No	Yes	No	No	Yes	Yes	No
V1 API	Timing		Instruction issued V1	15mins ahead of start	15mins ahead of start	15mins ahead of start	In realtime	15mins ahead of start	15mins ahead of start	15mins ahead of start	15mins ahead of start
	Start		Programme	"dynamic"	"secure"	"sustain"	"restore"	"SAOU_DA"	"SU_SEP"	"SU_SPP"	"OU_15"
			Zone ID	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"
			Meterable unit IDs	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"
	Stop		Programme	"dynamic"	"secure"	"sustain"	"restore"	"SAOU_DA"	"SU_SEP"	"SU_SPP"	"OU_15"
			Zone ID	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"	"zoneid"
			Meterable unit IDs	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"
V2 API	Notice Instruction	Timing	Instruction issued V2	n/a	n/a	n/a	n/a	day ahead at 13:30	Every thurs 14:00 ahead of delivery week	Every thurs 14:00 ahead of delivery week	n/a
		Start	Dispatch ID	n/a	n/a	n/a	n/a	"dispatchid"	"dispatchid"	"dispatchid"	n/a
			Dispatch Instruction	n/a	n/a	n/a	n/a	"Notice"	"Notice"	"Notice"	n/a
			Dispatch Start_UTC	n/a	n/a	n/a	n/a	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	n/a
			Dispatch Stop_UTC	n/a	n/a	n/a	n/a	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	n/a
			Power change kw	n/a	n/a	n/a	n/a	1000.00	1000.00	1000.00	1000.00
			Meterable unit IDs	n/a	n/a	n/a	n/a	"muid"	"muid"	"muid"	n/a
		Stop	Dispatch ID	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
			Dispatch Stop_UTC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
			Power change kw	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
			Meterable unit IDs	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Realtime Instruction	Timing	Instruction issued V2	15mins ahead of start	15mins ahead of start	15mins ahead of start	In realtime	15mins ahead of start	15mins ahead of start	15mins ahead of start	15mins ahead of start
		Start	Dispatch ID	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"
			Dispatch Instruction	"start"	"start"	"start"	"start"	"start"	"start"	"start"	"start"
			Dispatch Start_UTC	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"	"2023-01-08T14:00:00Z"
			Dispatch Stop_UTC	"maxruntime"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"maxruntime"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"maxruntime"
			Power change kw	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
			Meterable unit IDs	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"
		Stop	Dispatch ID	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"	"dispatchid"
			Dispatch Instruction	"stop"	"stop"	"stop"	"stop"	"stop"	"stop"	"stop"	"stop"
			Dispatch Stop_UTC	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"	"2023-01-08T15:00:00Z"
			Power change kw	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00	1000.00
			Meterable unit IDs	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"	"muid"

Current API

Existing V1 API – we will maintain this, adopting V2 will not be mandatory

POST https://{fsp_base_url}/dispatch/start

```
{
  "programme": "dynamic",
  "zone_id": "banbury",
  "meterable_unit_ids": [
    "xpNtyKQ4QfivpvdlaD26zQ",
    "2okto0EqRL2Ba6bWknoV-A"
  ]
}
```

POST https://{fsp_base_url}/dispatch/stop

(json payload identical to start instruction)

Proposed API

New V2 API – available to all new FSPs and to any existing FSPs that see benefit from doing so

All instructions will be sent to a single URL:
POST https://{fsp_base_url}/v2/dispatch
Multiple instructions sent in one message:

```
[
  {
    "dispatch_id": "FP1000",
    "dispatch_instruction": "notice",
    "dispatch_start": "2024-01-08T14:00:00Z",
    "dispatch_stop": "2024-01-08T16:00:00Z",
    "power_change_kw": 500.00,
    "asset_ids": [
      "dfsOIKQ4QfivpvdlaD26zQ",
      "78sdf9gsJKV87JlsdGA8jL"
    ]
  },
  {

  }
]
```

```
 "dispatch_id": "FP1001",
  "dispatch_instruction": "start",
  "dispatch_start": "2024-01-08T14:00:00Z",
  "dispatch_stop": "2024-01-08T16:00:00Z", // max end time
  "power_change_kw": 500.00,
  "asset_ids": [
    "xpNtyKQ4QfivpvdlaD26zQ",
    "2okto0EqRL2Ba6bWknoV5A"
  ]
},
{
  "dispatch_id": "FP1002",
  "dispatch_instruction": "stop",
  "dispatch_stop": "2024-01-08T14:00:00Z",
  "power_change_kw": 1000.0,
  "asset_ids": [
    "sdFH67mi07-sdfaA98tot"
  ]
```

ENA Standardised API

ENA V3 API – once available, we will roll this out along side V1 and V2

Post V3 launch, we'll keep our V1 & V2 dispatch APIs backwards compatible for as long as reasonably practical

ENA current position

Co-creation approach, ongoing work to compare the OpenADR 3.0 standard and its features with the ENA's standard flexibility products

FSP are being asked to feed into the process; survey on FSP requirements for a flexibility dispatch standard

Impact of Changes

Day ahead and scheduled utilisation instructions

- We propose to send day ahead notices at the same time every day to inform participation in other markets – does 13:30 work?
- For scheduled products we are proposing to send a weekly notice, every Thurs at 14:00 – does that work?
- Is our proposal of having a notice instruction and start and stop instructions going to be useful?

Other V2 changes

- Programme id removed
- Power change specified in instruction - allows for future potential of partial capacity
- We are not proposing any changes to the current method of signal acknowledgement

Your feedback will inform how we proceed

Other Feedback?

Please share with us any other feedback you have around the usability of the Flexible Power Portal.

We have a development pipeline in place, through which we can address changes informed by;

FSP feedback,
DNO requirements,
Industry standardisation.

DSO

4

Next Steps

nationalgrid

Timeline

During May	End of May	During June	From July	Aug/Sep
Consult with FSPs	Finalise and disseminate	Build and roll out V2 API	FSPs can adopt new V2 API	NGED will begin procuring inline with new products

After today;

- We'll share and publish these slides
- Schedule further 121 discussions where needed

DSO

Q&A

nationalgrid