RETAIL ENERGY CODE

R0009 – SDEP AND EES API
COST BENEFIT ANALYSIS

This document sets out the conclusions and assumptions from the REC Code Manager's analysis of the benefits, which has been based on system data.

SDEP
Introduction

The benefits of the SDEP API would come from users being able to perform actions faster, through automation by machine, and thereby release resources to be deployed elsewhere. We have quantified this resource as FTE.

We have used data covering the period from August 2020 when the system went live, to when the data was extracted in October 2022, on:

- the number of SDEP communications raised by anonymised SDEP Users (by company group)
- the number of messages sent by anonymised SDEP Users (by company group) within the communications
- the number of attachments

Assumptions

General assumptions:

1. SDEP Users would invest in an API based on usage volumes. We received five responses from Parties to a survey of SDEP user organisations under the SDEP Review, which indicated a wide range in the number of active SDEP users' individual organisations had - from a handful to hundreds.
2. We do not have FTE costs but assume a lower level of £35k and an upper level of £45k (incl. salary, recruitment, training, work support, benefits etc).
3. There may be other benefits of automation such as consistency and accuracy which we have not factored in here. While there may also be disbenefits of machine analysis not being able to detect errors or nuance in other Parties' communications which resulted in additional manual effort.

4. Potential costs to an SDEP user to develop, implement, and operate / maintain an API, including automation of certain Process Types (PTs) available in SDEP are not available; we have assumed a lower estimate of £60,000 + £5,000 pa and an upper estimate of £200,000 + £15,000 pa.
5. API usage volumes would be driven by the number of communications, and the type/nature of the PTs. How much effort and/or number of messages it takes to resolve a communication. Effort related to training new staff for manual SDEP processing, or ongoing management and maintenance of API operations have not been factored in.
6. DNOs are unlikely to invest in an API, based on responses to R0009 and volumes here. DNOs sent under 8,000 communications in the 27 months from go live, and there were under 20,000 communications of the PTs that only can be between Suppliers and DNOs (not Supplier to Supplier).
7. For Parties using an API, if they currently raise a single SDEP communication for multiple affected MPxN (same associated Party ID, same PT), they may raise a single communication per MPxN, thereby increasing the number of communications raised, and likely increasing the workload for any associated Parties not using an API. Each communication must be opened and read and depending on the nature of the query and the organisations' working practices, responded to/archived within SDEP. We have not factored such impact into these forecasts, but the implications may be material to some organisations at some times.
8. We have assumed the opportunity for payback period would be November 2023 to June 2025, which is a potential implementation date, to the end of the current SDEP contract.

<u>Forecast usage assumptions</u>:

Using the data for usage volumes over the last two years, we have forecast potential future volumes. We believe that SDEP communication trends over time will be driven by:

(a) Switching (but not including SoLRs as the MPID transfers or intra-company group switches);

(b) optional usage (SDEP becoming more embedded in process),

(c) future increase in usage from new use cases (additional PTs) and

(d) the smart rollout, leading to:

- **Switch rate** - 2/3 of all SDEP communications to date have been regarding disputed Switch reads. For the purposes of this analysis we predict the Switch rate over the next two years will continue to fall for the next 6 months, then start to increase, which will be the primary driver for change in SDEP comms volumes.

- **Optional usage** - SDEP usage may increase due to improved guidance, but not to a level that will notably affect overall volumes and may be offset by reduction in spurious use (e.g., of Contract Manager queries).
- **Additional use cases** - There are proposals to introduce additional PTs to cover other REC scenarios. For the purposes of this analysis we are assuming the volumes of those communications over the next two years would be minimal and therefore have not factored into this analysis.
- **Smart meter rollout** - In theory, increase in (functioning) smart meters should reduce the number of disputed Switch reads (and therefore total number of SDEP communications). We don't believe it is possible from the data to conclusively identify the influence of the smart rollout on SDEP communication volumes to date, given the significant drop in Switching rates. So we are not forecasting a reduction in SDEP usage from that driver in the next two years.

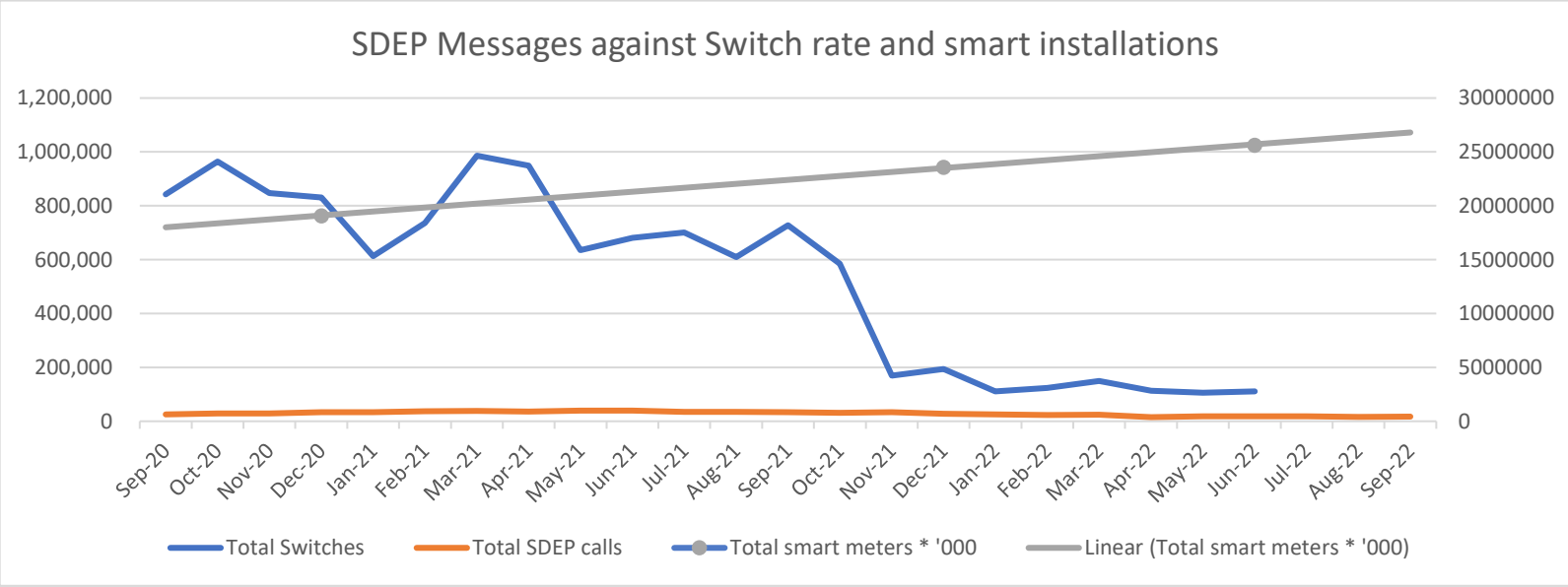


Fig.1 – Comparison of energy supplier switches, smart meter installations and SDEP communications raised

Total communications raised to date have been 731,782 (over 27 months). We forecast a 25% reduction for the 21 months from potential implementation date to end of the current contract, to 547,512 communications raised. The following graph shows the overall trend in new communications raised, that we have forecasted for the purposes of this analysis, which we think will be on the upper trend of likely future SDEP communications, given previous levels.

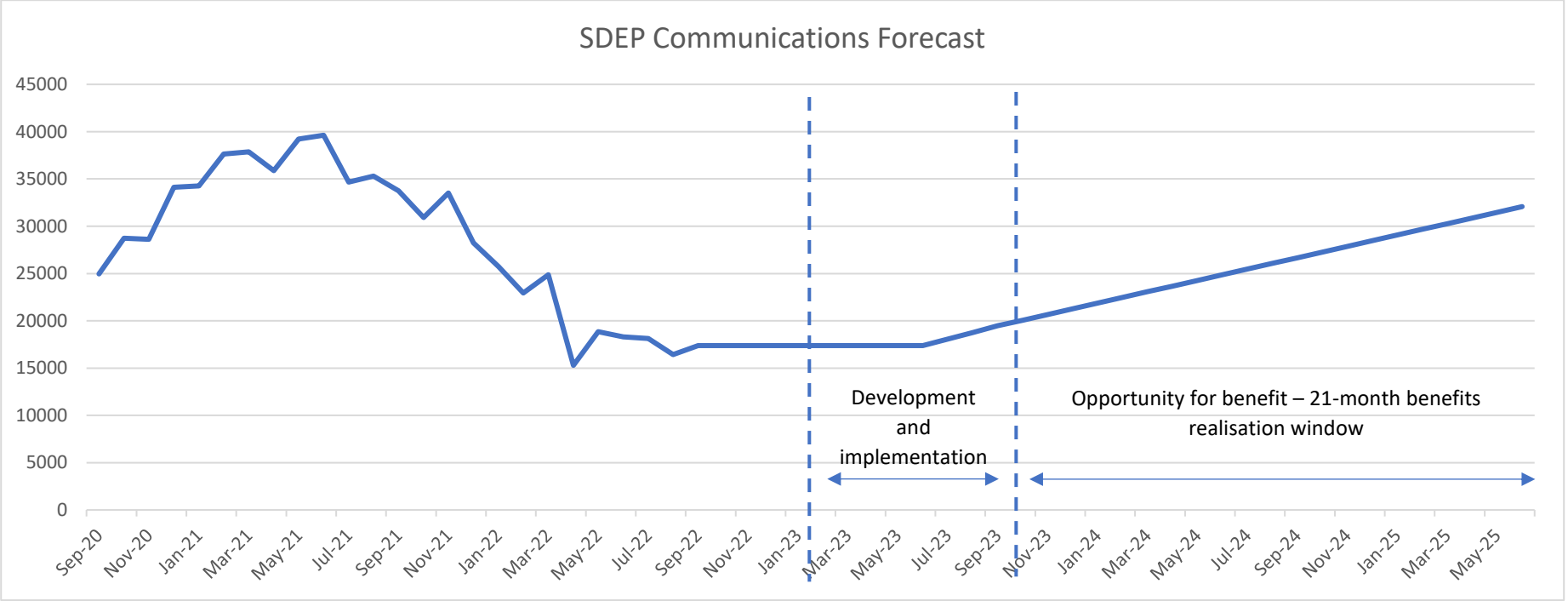


Fig.2 – Rate of new SDEP communications per month raised to date (Oct 2022) and forecast to June 2025

Workflow Analysis

We have derived our estimations of the benefits of an API across the workflow steps in raising and resolving queries via SDEP:

Trigger

The event/action that identifies the need for an SDEP communication to be raised.

Sits outside the SDEP; output is the information required to raise an SDEP

SDEP communication raised

Covers population of new SDEP communication (for one or more MPxN) with standard data items for the relevant PT, by the initiating Party.

Associated Party reviews – Interrogation/resolution & response

Covers review of content of communication, validation, determination of action required and taking/triggering the action, with construction of response message.

Follow up/resolution message

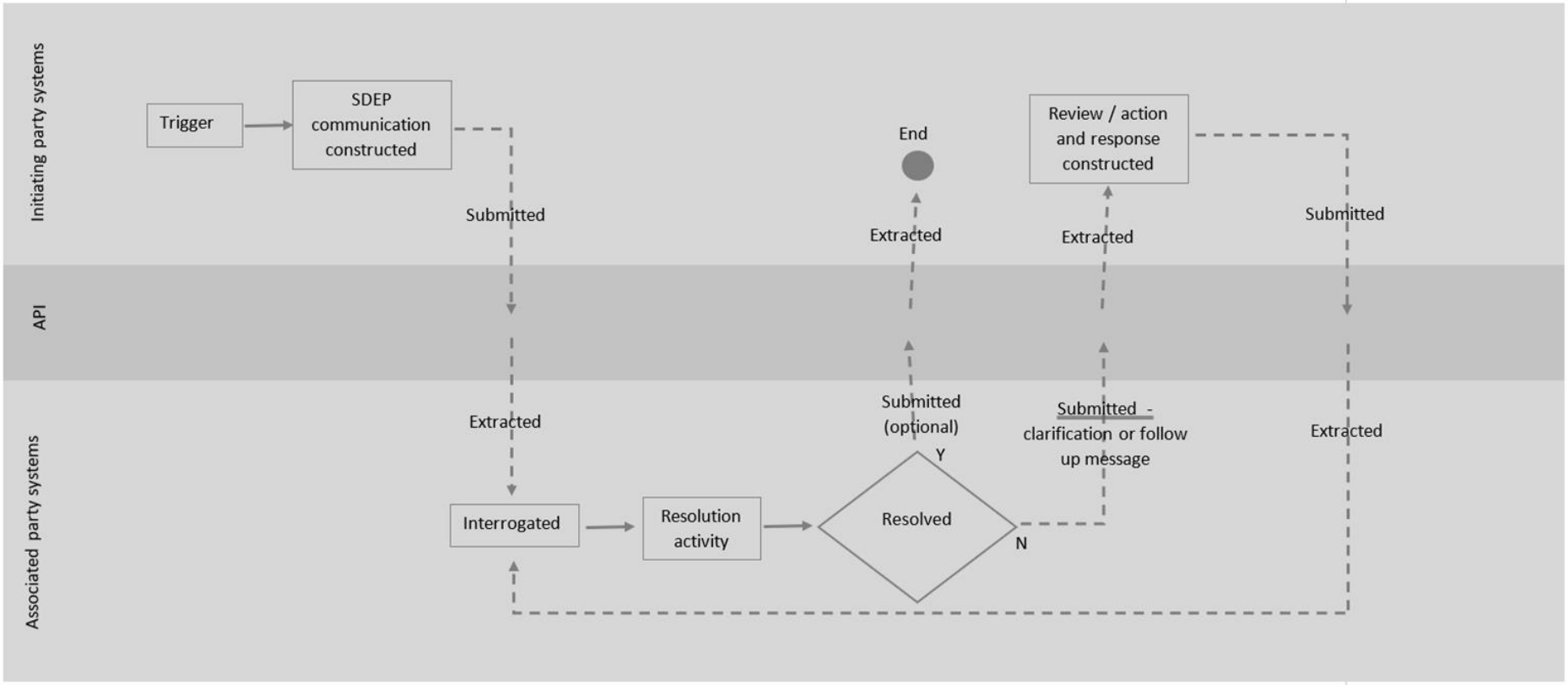
Covers entering message into SDEP.

Archive

Covers setting the status of the SDEP communication to archive when a Party believes it is resolved completely or to the extent possible.

Fig.3 – SDEP communication workflow

The following process diagram is a representation of where the API would be used for SDEP. SDEP communications and messages can be constructed outside of the system and pushed in/extracted on a scheduled basis by the users, which would replace some manual effort.



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Trigger for an SDEP communication		
Includes creation of attachments		
Assumptions Organisations could choose to automate some of the analysis and creation of list of instances requiring an SDEP communication to be raised now, therefore this would not be affected by the presence of an API		
Data / Volumes 1 in 5 communications has an attachment		
Current resource N/a	**API resource** n/a	**Saving** n/a
Conclusion An API being available would not influence if/how users identify where an SDEP communication should be raised		

SDEP communication raised		
Covers population of a new SDEP communication, for one or more MPxN. Required data items have been prepared in prior step (mix of optional/mandatory fields)		
Assumptions 1. Content has been created/collated outside the system and could therefore be submitted into the API adaptor instead of given to the person manually entering the data. Assumption is that the API could entirely replace manual population of each initial SDEP communication 2. Average population takes 2 minutes if data items are pre-prepared 3. Each company group will raise the same proportion of the total forecast volume of SDEP comms in 2023-2025 as it did in the 27 months since SDEP go live.		
Data / Volumes Total volume raised by month / PT / company group since SDEP launch – 731,782 Total forecast to be raised in 2023-2025 – 547,512		
Current resource To date 15 FTE required across all company groups, with 1	**API resource** None for API users	**Saving** Lower - 0 FTE Upper - 2 FTE

company group needing more than 2 FTE 2023/25 forecast 13 FTE with 1 Co Groups needing more than 2 FTE		If the company group with 2 (upper) FTE used the API
Conclusion An API would provide little benefit from replacing manual data entry with submission of prepared information directly into SDEP.		

Associated Party reviews - interrogation		
An API could *facilitate* the automation of certain actions, though that would be up to the SDEP user to determine if/how to do so. Communications could be interrogated by machine much more easily if they could be extracted from SDEP in a single action, to understand the query and what resolving action required. There is likely to be benefit from being able to extract all current (or filtered) SDEP communications in a single action, even if no other functions were performed by API call		
Assumptions 1. Access to raw data would support interrogation of communications by on average 1 minute per SDEP communication for the associated (receiving) Party by saving the user having to switch pages in SDEP and identify key data items. 2. We are assuming each company group receives communications at the same proportion it raises them, as we don't have recipient information. Due to limited numbers of queries that are only between DNO and Supplier roles, we have not sought to exclude them.		
Data / Volumes Total volume raised by month / PT / company group since SDEP launch – 731,782 Total forecast to be raised in 2023/2024 – 555,920		
Current resource To date if a minute is needed to interrogate each communication, that could be supported by an API extracting the raw data, 4	**API resource** None for API users	**Saving** One company group could save 0.6 FTE

FTE have been so deployed over the last 27 months. 2023-2025 forecast would be for a reduction to 3.5 across all company groups, with none over 0.6 FTE		

Conclusion
No company group would save more than 0.6 FTE based on our assumptions, so we don't believe it would contribute significantly to a positive business case.
Non-API users could see workload increase for this stage of the process if one SDEP communication were raised per MPxN.

Associated Party reviews – resolution and response

As above, an API could *facilitate* the automation of certain actions, if the SDEP user wished to develop such functionality in their systems. Once the SDEP communications have been raised against an 'associated' Party, and interrogated as above, resolving action must be taken (e.g., sending of information) automatically for certain PTs without user intervention, and a response message could probably be constructed to go into SDEP.

Assumptions

1. We assume that by their nature, it would be more feasible to automate resolving actions (and subsequent creation of clarifying message) for some PTs than others. We suggest that there are 8 PTs that could be straight forward to automate processing, resolution and response construction, if the API could extract the initial communication details.
2. 3 of the 8 have logged <500 communications each to date, so should be excluded as not worth developing automation.
3. These remaining 5 PTs have had 68,702 related communications raised since go live, spread across 57 company groups. The data does not indicate the company group of the associated Party, so to make any assessment we must assume the associated Parties receive volumes equal to the initiating Supplier - i.e., 12 company groups with >1500 total of these 5 communications raised to date.
4. Assuming manual access, review, resolution and response to the 5 PT types would be on average 3 minutes per communication.
5. We have not attempted to cost development of the automation and note there may risk of errors introduced that required additional manual effort to address.
6. We assume that all other PTs require human intervention to assess and act on, which the API would not contribute to.

Data / Volumes Just over 1 FTE have been deployed to comms that could be automated with API provision, at those Suppliers with >1500 comms each. Just under 1 FTE would be required for forecast SDEP communications for 2023-2025		
Current resource 1 FTE since go live 1 FTE for 2023-2025	**API resource** None for API users	**Saving** None
Conclusion No company group would save more than 0.2 FTE based on our assumptions, so we don't believe it would contribute to a positive business case. Non-API users could see workload increase for this stage of the process if one SDEP communication were raised per MPAN.		

Resolution message		
An API could entirely replace manual entering of messages, once the content of the messages has been created - some of which could be automated as above.		
Assumptions 1. Per message, it currently takes an average of 2 minutes to enter the message details per message.		
Data / Volumes Across all SDEP communications to date, an average of 0.6 messages are sent per communication		
Current resource Since go live: Total 9 FTE required, with no Company Groups needing more than 1.4 FTE For 2023-2025 forecast 8.7 FTE required, no Company Group needing more than 1.4 FTE	**API resource** None for API users	**Saving** None

Conclusion
No company group would save more than 1.4 FTE based on our assumptions, so we don't believe it would contribute to a positive business case.

Conclusion

Looking at the company groups (A, B & C) who may benefit from an API, we have estimated savings and costs.

Savings – cost of an FTE likely to be assigned to SDEP processing could range from £35,000-£45,000 per year.

Costs – cost of an API adaptor and integration with any internal systems (e.g., CRM) could range between £65k and £215k (excluding ongoing annual maintenance costs).

Company Group	Total FTE saving	FTE Saving - Lower £	FTE Saving - Upper £	API Cost Lower	API Cost Upper
A	4.3	151,591	194,902	65,000	215,000
B	3.3	114,998	147,854	65,000	215,000
C	3.1	109,760	141,120	65,000	215,000
D	2.3	78,992	101,561	65,000	215,000
E	1.8	64,516	82,949	65,000	215,000
F	1.6	55,448	71,291	65,000	215,000
G	1.2	42,097	54,124	65,000	215,000
H	1.0	35,327	45,420	65,000	215,000
I	1.0	35,560	45,719	65,000	215,000
J	0.7	24,759	31,832	65,000	215,000
K	0.6	22,136	28,461	65,000	215,000

Fig.4 – company groups who may save more than 1 FTE from SDEP API usage

There are likely to be more efficient ways to achieve some of these savings, e.g., introducing a raw data extraction tool as is proposed under the current SDEP Review, so that work can be performed faster offline and prepared for data entry into SDEP.

EES

Introduction

The benefits of the EES API would come from users being able to submit large number of changes to user accounts and permissions in a single action.

We have used data covering the period from October 2017 to when the data was extracted in November 2022, on:

- the number of new EES users per company group registered per month
- the number of deleted EES users per company group per month

Assumptions

General assumptions:

EES Users would invest in the API if their monthly activity in creating, changing and deleting users was sufficient, and/or if their standard organisation approach was to automate wherever possible.

We are assuming activity going forward would be similar to 2021/22 (which was higher than the previous 3 years, possibly due to SoLR events meaning that some organisations were subsuming new teams into their businesses for the gained MPIDs).

We assume that the API would save approximately 75% time per user change, as the information about changes would still need to be collated and formatted to submit to the API.

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Workflow Analysis

We have derived our estimations of the benefits of an API across the workflow steps in updating, creating and deleting user permissions.

Action	Description and assumptions	Data / Volumes	Current resource	API resource	Potential saving
Trigger	New starters, leavers or change in role of existing user				
Update records - new user	Dependent on the extent of the users' required permissions across MPIDs in the company group and the number of functions they have permissions for Average time to create a user new - 3 minutes Some SDEP permissions will be significantly longer if multiple MPIDs and many/all PTs, but others will be much quicker. Note that in 2021 and 2022 there were considerably more EES user changes.	All EES Users - average 608 pcm (1253 in 2021/22) Top 12 EES users - average 42 pcm (90 in 2021/22)	Top 12 EES users - Average pcm 0.4 FTE	Top 12 EES users - Average pcm 0.1 FTE	Average pcm 0.3 FTE
Update records - amend user permissions	Dependent on the extent of the users' required permissions across MPIDs in the company group and the number of functions they have permissions for Average time to amend a user's permissions - 3 minutes Some SDEP permissions will be significantly longer if multiple MPIDs and many/all PTs, but others will be much quicker. Data is not available on amended user permissions. We assume that each company group makes	All EES Users - average 2506 pcm in 2021/22	Top 12 EES users - Average pcm 0.9 FTE	Top 12 EES users - Average pcm 0.2 FTE	Average pcm 0.7 FTE

	twice as many permission changes as new user changes.				
Update records - delete user	Average time to delete a user - 1 minute	All EES Users - average 2892 pcm in 2021/22	Top 12 EES users - Average pcm 0.3 FTE	Top 12 EES users - Average pcm 0.1 FTE	Average pcm 0.2 FTE

Conclusion

If the 12 company groups who make the most changes to EES users on a monthly basis, switched to using the API, we estimate the total saving would be 1.3 FTE.

This would be very unlikely to contribute to a positive business case for investing in an API, and there are likely to be more efficient means, for example creating user profiles that can be replicated for new starters or change in user permissions.

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OVERALL CONCLUSION – SDEP AND EES APIS

Total forecast saving from Parties (A, B & C) that might potentially use the API: £850k* over 21 months

Total forecast cost to individual Parties and central cost: £1.15m** over 21 months

* upper estimate of FTE saving for 21 months

** upper estimate of 3 individual Party costs (A, B & C), plus £400k central costs and maintenance costs of £40k per year for the 2 years

There is therefore a net loss of £250k across a small number of Parties in implementing the EES and SDEP APIs. But we would highlight the number of broad assumptions and estimates made in these calculations, and the increased possibility of unforeseen consequences.

Although the Parties (A, B & C) could see benefits (if they invested in their development) the central system cost would be spread across all Parties, even those that are unlikely to see any benefit or would not invest in their system development.