Data Article

Hybrid choice model dataset of a representative Swiss online panel survey on peoples' preferences related to mixed renewable energy scenarios in landscapes and the effect of landscape-technology fit

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A R T I C L E   I N F O

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A B S T R A C T

We present stated preference data based on a national representative Swiss online panel survey related to preference of mixed renewable energy infrastructure in landscapes. Data were collected between November 2018 and March 2019 via an online questionnaire and yielded 1026 responses. The online questionnaire consisted of two main parts – (1) questions covering meanings related to landscapes, nature and renewable energy infrastructure and questions regarding the “fit” of landscape/renewable energy infrastructure (REI) combinations and (2) a stated choice experiment. While in the first part of the questionnaire we asked respondents about their personal connection to certain landscapes, to nature and to specific REI, we also asked them to evaluate the fitting of seven different Swiss landscapes (near natural alpine areas, northern alps, touristic alpine areas, agricultural plateau, urban plateau, Jura ridges, urban alpine valley) with five different REI (wind, PV ground/agricultural, PV ground/other, PV...
roof, power lines) combinations. In the second part of the questionnaire, the stated choice experiment confronted respondents with 15 consecutive choice tasks, with each task involving a choice between two “energy system transformation” options and an opt-out option (none). Each choice option (beside the opt-out option) included four unlabeled attributes (landscape, wind energy infrastructure, photovoltaic energy infrastructure, high voltage overhead power line infrastructure) with varying levels. Due to data cleaning procedures (item nonresponse) the number of responses used within hybrid choice modeling and analysis was \( n = 844 \) (12,660 choice observations). An analysis of the hybrid choice model and further insights are presented in the article “How landscape-technology fit affects public evaluations of renewable energy infrastructure scenarios. A hybrid choice model.”

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**Specifications Table**

| Subject | Social Science |
|---------|----------------|
| Specific subject area | Perceived landscape quality |
| Type of data | CSV data file |
| How data were acquired | Online questionnaire Sawtooth |
| Data format | Raw data |
| Parameters for data collection | The online panel survey targeted Swiss residents and is representative regarding language, gender, age, education and landscape. |
| Description of data collection | Data were collected with panel operator BILENDI and were administered via Sawtooth Software. Active panel members in Switzerland were invited to participate. Two reminders were sent. The questionnaire consisted of two parts, a choice experiment and questions covering meanings related to landscapes, nature and renewable energy infrastructure (REI), including the “fit” of landscape/REI combinations. |
| Data source location | Institution: Swiss federal research institute WSL. Country: Switzerland |
| Data accessibility | Data is accessible via EnviDat, the WSL data portal Repository name: EnviDat (https://www.envi.dat.ch/) Data identification number: https://doi.org/10.16904/envi.dat.206. Direct URL to data: https://www.envi.dat.ch/dataset/landscape-technology-fit-public-evaluation |
| Related research article | B. Salak, K. Lindberg, F. Kienast, M. Hunziker, How landscape-technology fit affects public evaluations of renewable energy infrastructure scenarios. A hybrid choice model, Renewable and Sustainable Energy Reviews. In Press. |

**Value of the Data**

- Presented data provide information on public preferences across different energy scenarios. They also provide a proof-of-concept for “landscape-technology fit” and contain information about predictors (landscape- and renewable energy meanings, exposure) of peoples’ preferences related to landscape developments. Also, the dataset highlights the interconnectedness of landscape and energy aspects in terms of the perceived landscape quality and its potential relevance for decision making processes.
- The consideration of meanings for decision making processes and policy making (not only visual aspects) could be brought into all policy areas and technical decision-making tools, even those that are not landscape-oriented. During communication and planning residents of potential energy sites could be (1) informed early on and (2) invited to participatory
workshops in which the meaning of landscape and REI is addressed in addition to usual visual scenarios and (3) discussing siting alternatives.

- The dataset can be used to operationalize landscape-technology fit (LTF) concept which derived from place-technology fit (PTF). In particular, this dataset may be used as a base line for future LTF model improvements in alpine regions. They contain explicit information on meanings ascribed to alpine landscapes and to specific renewable energy infrastructures.

1. Data Description

We conducted a representative online panel survey in Switzerland between November 2018 and March 2019 to elicit the preferences of Swiss residents for landscape oriented renewable energy infrastructure developments. The questionnaire was developed by WSL and operated by panel provider BILENDI GmbH. The survey is representative in language, age, gender, education and landscape.

The questionnaire consisted of two major parts, where within the first part questions were related (1) to meanings ascribed to landscapes and renewable energy infrastructure, (2) to aspects of landscape-technology fit and (3) to exposure of people to landscapes and renewable energy infrastructures. Within the second part a stated choice model was presented. All respondents were designated to one of seven landscapes (near natural alpine areas, northern alps, touristic alpine areas, agricultural plateau, urban plateau, jura ridges, urban alpine valley) according to the ZIP code of their origin. The landscape visualizations used in this study are illustrated in Fig. 1, whereas further details about its joint development can be found in Spielhofer et al. [1]. All survey items and scales are presented in Table 1, whereas the questionnaire is added to the supplementary material of the present article. Socio demographic items and respondent ID were provided by the panel provider (items 1 to 6). After starting the survey, respondents were first asked to select landscapes that most closely represent the landscape of their living, recreation and childhood environment (variables 160–162). In a next step, respondents were asked to evaluate (randomly presented) meanings ascribed to each of the seven landscapes presented. A generalized overview of the evaluation of landscape meaning items (variables 84 to 153) is provided in Table 2. Consequently, respondents were asked about (randomly presented) mean-

![Fig. 1. Landscape visualizations used in this study.](image-url)
### Table 1
Item based description of the dataset.

| Var_num | Var_code          | Var_descr                              | 1                     | 2              | 3              | 4              | 5              | 6              |
|---------|-------------------|----------------------------------------|-----------------------|----------------|----------------|----------------|----------------|----------------|
| 1       | sys_RespNum       | Respondent ID                          | –                     | Swiss-French   | Swiss-German   | Swiss-Italian  |                |                |
| 2       | Lang              | Language region                        | Swiss-German Female   | Male           | 18–24          | 25–34          | 35–44          | 45–54          | 55–64          |
| 3       | Gend              | Gender                                 | Female                | Male           |                |                |                |                |
| 4       | Age               | Age                                    | 18–24                 | 25–34          | 35–44          | 45–54          | 55–64          |                |
| 5       | Edu               | Education                              | obligatory school     | secondary level: professional education | secondary level: general education | tertiary level: professional education | tertiary level: universities |                |
| 6       | Ls                | ZIP designated Landscape               | Alp                   | Northern prealps | Touristic alpine areas | Agricultural Plateau | Urban plateau | Jura ridges | Urban alpine valley |
| 7–21    | CE1_Random1–15    | Random Choice task 1                   | –                     | very poor      | poor           | fair           | good           | very good      |
| 22–56   | LTFaband-alpval_r1| How do you think the following energy infrastructures fit with these landscapes? (LS1–7+Powerlines) | poor                   | fair           | good           | very good      |
| 23      | LTFaband-alpval_r2| How do you think the following energy infrastructures fit with these landscapes? (LS1–7+PVagri) | very poor             | fair           | good           | very good      |
| 24      | LTFaband-alpval_r3| How do you think the following energy infrastructures fit with these landscapes? (LS1–7+PVground) | very poor             | fair           | good           | very good      |
| 25      | LTFaband-alpval_r4| How do you think the following energy infrastructures fit with these landscapes? (LS1–7+PVroof) | very poor             | fair           | good           | very good      |
| 26      | LTFaband-alpval_r5| How do you think the following energy infrastructures fit with these landscapes? (LS1–7+Wind) | very poor             | fair           | good           | very good      |
| 27      | LTFprealps_r1     | How do you think the following energy infrastructures fit with these landscapes? (Pre_alps+Powerlines) | very poor             | fair           | good           | very good      |
| Var_num | Var_code     | Var_descr                                                                 | 1   | 2    | 3    | 4    | 5    | 6    | 7    |
|---------|--------------|---------------------------------------------------------------------------|-----|------|------|------|------|------|------|
| 28      | LTFprealps_r2| How do you think the following energy infrastructures fit with these landscapes? (Pre_alps+PVagrri) | very poor | poor | fair | good | very good |
| 29      | LTFprealps_r3| How do you think the following energy infrastructures fit with these landscapes? (Pre_alps+PVground) | very poor | poor | fair | good | very good |
| 30      | LTFprealps_r4| How do you think the following energy infrastructures fit with these landscapes? (Pre_alps+PProoef) | very poor | poor | fair | good | very good |
| 31      | LTFprealps_r5| How do you think the following energy infrastructures fit with these landscapes? (Pre_alps+Wind) | very poor | poor | fair | good | very good |
| 32      | LTFalptour_r1| How do you think the following energy infrastructures fit with these landscapes? (Alp_tour+Powerlines) | very poor | poor | fair | good | very good |
| 33      | LTFalptour_r2| How do you think the following energy infrastructures fit with these landscapes? (Alp_tour+PVagrri) | very poor | poor | fair | good | very good |
| 34      | LTFalptour_r3| How do you think the following energy infrastructures fit with these landscapes? (Alp_tour+PVground) | very poor | poor | fair | good | very good |
| 35      | LTFalptour_r4| How do you think the following energy infrastructures fit with these landscapes? (Alp_tour+PProoef) | very poor | poor | fair | good | very good |
| 36      | LTFalptour_r5| How do you think the following energy infrastructures fit with these landscapes? (Alp_tour+Wind) | very poor | poor | fair | good | very good |

(continued on next page)
| Var_num | Var_code       | Var_descr                                                                 | 1       | 2       | 3       | 4       | 5       | 6       | 7       |
|---------|----------------|---------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| 37      | LTFplatagri_r1 | How do you think the following energy infrastructures fit with these landscapes? (Plat_agri+Powerlines) | very poor | poor    | fair    | good   | very good |
| 38      | LTFplatagri_r2 | How do you think the following energy infrastructures fit with these landscapes? (Plat_agri+PVagri) | very poor | poor    | fair    | good   | very good |
| 39      | LTFplatagri_r3 | How do you think the following energy infrastructures fit with these landscapes? (Plat_agri+PVground) | very poor | poor    | fair    | good   | very good |
| 40      | LTFplatagri_r4 | How do you think the following energy infrastructures fit with these landscapes? (Plat_agri+PVroof) | very poor | poor    | fair    | good   | very good |
| 41      | LTFplatagri_r5 | How do you think the following energy infrastructures fit with these landscapes? (Plat_agri+Wind) | very poor | poor    | fair    | good   | very good |
| 42      | LTFplaturb_r1  | How do you think the following energy infrastructures fit with these landscapes? (Plat_urb+Powerlines) | very poor | poor    | fair    | good   | very good |
| 43      | LTFplaturb_r2  | How do you think the following energy infrastructures fit with these landscapes? (Plat_urb+PVagri) | very poor | poor    | fair    | good   | very good |
| 44      | LTFplaturb_r3  | How do you think the following energy infrastructures fit with these landscapes? (Plat_urb+PVground) | very poor | poor    | fair    | good   | very good |
| 45      | LTFplaturb_r4  | How do you think the following energy infrastructures fit with these landscapes? (Plat_urb+PVroof) | very poor | poor    | fair    | good   | very good |
### Table 1 (continued)

| Var_num | Var_code  | Var_descr                                                                 | 1     | 2     | 3     | 4     | 5     | 6     | 7     |
|---------|-----------|---------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| 46      | LTFplaturb_r5 | How do you think the following energy infrastructures fit with these landscapes? (Plat_urb+Wind) | very poor | poor | fair | good | very good |
| 47      | LTFjura_r1   | How do you think the following energy infrastructures fit with these landscapes? (Jura+Powerlines) | very poor | poor | fair | good | very good |
| 48      | LTFjura_r2   | How do you think the following energy infrastructures fit with these landscapes? (Jura+PVagri) | very poor | poor | fair | good | very good |
| 49      | LTFjura_r3   | How do you think the following energy infrastructures fit with these landscapes? (Jura+PVground) | very poor | poor | fair | good | very good |
| 50      | LTFjura_r4   | How do you think the following energy infrastructures fit with these landscapes? (Jura+PVroof) | very poor | poor | fair | good | very good |
| 51      | LTFjura_r5   | How do you think the following energy infrastructures fit with these landscapes? (Jura+Powerlines) | very poor | poor | fair | good | very good |
| 52      | LTFalpval_r1 | How do you think the following energy infrastructures fit with these landscapes? (Alp_urb+Powerlines) | very poor | poor | fair | good | very good |
| 53      | LTFalpval_r2 | How do you think the following energy infrastructures fit with these landscapes? (Alp_urb+PVagri) | very poor | poor | fair | good | very good |
| 54      | LTFalpval_r3 | How do you think the following energy infrastructures fit with these landscapes? (Alp_urb+PVground) | very poor | poor | fair | good | very good |
| 55      | LTFalpval_r4 | How do you think the following energy infrastructures fit with these landscapes? (Alp_urb+PVroof) | very poor | poor | fair | good | very good |

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Table 1 (continued)

| Var_num | Var_code         | Var_descr                                                                 | 1          | 2          | 3          | 4          | 5          | 6          | 7          |
|---------|------------------|----------------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|
| 56      | LTFAlpval_r5     | How do you think the following energy infrastructures fit with these landscapes? (Alp_urb+Wind) | very poor  | poor       | fair       | good       | very good  |            |            |
| 57      | REwind_r1        | Wind energy infrastructure provides clean energy                           | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 58      | REwind_r2        | Wind energy infrastructure secures jobs                                    | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 59      | REwind_r3        | Wind energy infrastructure supports local economy                          | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 60      | REwind_r4        | Wind energy infrastructure cannot replace other energy sources in CH       | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 61      | REwind_r5        | Wind energy infrastructure delivers limited yield                          | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 62      | REwind_r7        | Wind energy infrastructure ensures variety in the landscape                | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 63      | REwind_r9        | Wind energy infrastructure represent the progress of humans                | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 64      | REwind_r12       | Wind energy infrastructure contribute to solving the most important problems of humanity | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 65      | REwind_r13       | Wind energy infrastructure represent awakening                              | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 66      | REpvground_r1    | PV ground infrastructure provides clean energy                             | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 67      | REpvground_r2    | PV ground infrastructure secures jobs                                      | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 68      | REpvground_r3    | PV ground infrastructure supports local economy                            | strongly   | disagree   | in between | agree       | strongly   | agree       |
| 69      | REpvground_r4    | PV ground infrastructure cannot replace other energy sources in CH         | strongly   | disagree   | in between | agree       | strongly   | agree       |

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| Var_num | Var_code       | Var_descr                                                                 | 1     | 2     | 3     | 4     | 5     | 6     | 7     |
|---------|----------------|---------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| 70      | REpvground_r5  | PV ground infrastructure deliver limited yield                            | strongly disagree | disagree | in between | agree | strongly agree |
| 71      | REpvground_r7  | PV ground infrastructure ensures variety in the landscape                 | strongly disagree | disagree | in between | agree | strongly agree |
| 72      | REpvground_r9  | PV ground infrastructure represent the progress of humans                 | strongly disagree | disagree | in between | agree | strongly agree |
| 73      | REpvground_r12 | PV ground infrastructure contribute to solving the most important problems of humanity | strongly disagree | disagree | in between | agree | strongly agree |
| 74      | REpvground_r13 | PV ground infrastructure represent awakening                              | strongly disagree | disagree | in between | agree | strongly agree |
| 75      | REpvroof_r1    | PV roof infrastructure provides clean energy                              | strongly disagree | disagree | in between | agree | strongly agree |
| 76      | REpvroof_r2    | PV roof infrastructure secures jobs                                      | strongly disagree | disagree | in between | agree | strongly agree |
| 77      | REpvroof_r3    | PV roof infrastructure supports local economy                             | strongly disagree | disagree | in between | agree | strongly agree |
| 78      | REpvroof_r4    | PV roof infrastructure cannot replace other energy sources in CH          | strongly disagree | disagree | in between | agree | strongly agree |
| 79      | REpvroof_r5    | PV roof infrastructure deliver limited yield                              | strongly disagree | disagree | in between | agree | strongly agree |
| 80      | REpvroof_r7    | PV roof infrastructure ensures variety in the landscape                   | strongly disagree | disagree | in between | agree | strongly agree |
| 81      | REpvroof_r9    | PV roof infrastructure represent the progress of humans                   | strongly disagree | disagree | in between | agree | strongly agree |
| 82      | REpvroof_r12   | PV roof infrastructure contribute to solving the most important problems of humanity | strongly disagree | disagree | in between | agree | strongly agree |
| 83      | REpvroof_r13   | PV roof infrastructure represent awakening                                | strongly disagree | disagree | in between | agree | strongly agree |
| 84      | meaningsABAND_r1 | Near natural alpine landscapes are a symbol for human progress           | strongly disagree | disagree | in between | agree | strongly agree |

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Table 1 (continued)

| Var_num | Var_code       | Var_descr                                                                 | 1       | 2       | 3       | 4       | 5       | 6       |
|---------|----------------|----------------------------------------------------------------------------|---------|---------|---------|---------|---------|---------|
| 85      | meaningsABAND_r3 | Near natural alpine landscapes represent the dominance of humans over nature | strongly disagree | disagree | in between | agree | strongly agree |
| 86      | meaningsABAND_r5 | Near natural alpine landscapes represent scenic beauty                     | strongly disagree | disagree | in between | agree | strongly agree |
| 87      | meaningsABAND_r6 | Near natural alpine landscapes offer sense of intimicy/familiarity          | strongly disagree | disagree | in between | agree | strongly agree |
| 88      | meaningsABAND_r7 | Near natural alpine landscapes help to recognize sense                     | strongly disagree | disagree | in between | agree | strongly agree |
| 89      | meaningsABAND_r9 | Near natural alpine landscapes help to can relax my soul                    | strongly disagree | disagree | in between | agree | strongly agree |
| 90      | meaningsABAND_r10| Near natural alpine landscapes make me feeling comfortable                 | strongly disagree | disagree | in between | agree | strongly agree |
| 91      | meaningsABAND_r11| Near natural alpine landscapes are a symbol for an authentic landscape     | strongly disagree | disagree | in between | agree | strongly agree |
| 92      | meaningsABAND_r12| Near natural alpine landscapes represent an intact world                   | strongly disagree | disagree | in between | agree | strongly agree |
| 93      | meaningsABAND_r13| Near natural alpine landscapes help to experience myself                   | strongly disagree | disagree | in between | agree | strongly agree |
| 94      | meaningsPREALPS_r1| Northern alpine landscapes are a symbol for human progress                 | strongly disagree | disagree | in between | agree | strongly agree |
| 95      | meaningsPREALPS_r3| Northern alpine landscapes represent the dominance of humans over nature   | strongly disagree | disagree | in between | agree | strongly agree |
| 96      | meaningsPREALPS_r5| Northern alpine landscapes represent scenic beauty                         | strongly disagree | disagree | in between | agree | strongly agree |
| 97      | meaningsPREALPS_r6| Northern alpine landscapes offer sense of intimicy/familiarity             | strongly disagree | disagree | in between | agree | strongly agree |
| 98      | meaningsPREALPS_r7| Northern alpine landscapes help to recognize sense                        | strongly disagree | disagree | in between | agree | strongly agree |
| 99      | meaningsPREALPS_r9| Northern alpine landscapes help to can relax my soul                       | strongly disagree | disagree | in between | agree | strongly agree |
| 100     | meaningsPREALPS_r10| Northern alpine landscapes make me feeling comfortable                   | strongly disagree | disagree | in between | agree | strongly agree |

(continued on next page)
Table 1 (continued)

| Var_num | Var_code    | Var_descr                                                                 | 1     | 2     | 3     | 4     | 5     | 6     | 7     |
|---------|-------------|----------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
|         | meaningsPREALPS_r11 | Northern alpine landscapes are a symbol for an authentic landscape       | strongly disagree | disagree | in between | agree | strongly agree |
| 102     | meaningsPREALPS_r12 | Northern alpine landscapes represent an intact world                     | strongly disagree | disagree | in between | agree | strongly agree |
| 103     | meaningsPREALPS_r13 | Northern alpine landscapes help to experience myself                     | strongly disagree | disagree | in between | agree | strongly agree |
| 104     | meaningsALPTOUR_r1  | Alpine touristic landscapes are a symbol for human progress               | strongly disagree | disagree | in between | agree | strongly agree |
| 105     | meaningsALPTOUR_r3  | Alpine touristic landscapes represent the dominance of humans over nature | strongly disagree | disagree | in between | agree | strongly agree |
| 106     | meaningsALPTOUR_r5  | Alpine touristic landscapes represent scenic beauty                       | strongly disagree | disagree | in between | agree | strongly agree |
| 107     | meaningsALPTOUR_r6  | Alpine touristic landscapes offer sense of intimacy/familiarity           | strongly disagree | disagree | in between | agree | strongly agree |
| 108     | meaningsALPTOUR_r7  | Alpine touristic landscapes help to recognize sense                       | strongly disagree | disagree | in between | agree | strongly agree |
| 109     | meaningsALPTOUR_r9  | Alpine touristic landscapes help to can relax my soul                     | strongly disagree | disagree | in between | agree | strongly agree |
| 110     | meaningsALPTOUR_r10 | Alpine touristic landscapes make me feeling comfortable                   | strongly disagree | disagree | in between | agree | strongly agree |
| 111     | meaningsALPTOUR_r11 | Alpine touristic landscapes are a symbol for an authentic landscape       | strongly disagree | disagree | in between | agree | strongly agree |
| 112     | meaningsALPTOUR_r12 | Alpine touristic landscapes represent an intact world                     | strongly disagree | disagree | in between | agree | strongly agree |
| 113     | meaningsALPTOUR_r13 | Alpine touristic landscapes help to experience myself                     | strongly disagree | disagree | in between | agree | strongly agree |

(continued on next page)
| Var_num | Var_code                  | Var_descr                                                                                                                                 | 1          | 2          | 3          | 4          | 5          | 6          | 7          |
|---------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|------------|------------|
| 114     | meaningsPLATAGRI_r1       | Agricultural plateau landscapes are a symbol for human progress                                                                         | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 115     | meaningsPLATAGRI_r3       | Agricultural plateau landscapes represent the dominance of humans over nature                                                             | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 116     | meaningsPLATAGRI_r5       | Agricultural plateau landscapes represent scenic beauty                                                                                | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 117     | meaningsPLATAGRI_r6       | Agricultural plateau landscapes offer sense of intimicy/familiarity                                                                       | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 118     | meaningsPLATAGRI_r7       | Agricultural plateau landscapes help to recognize sense                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 119     | meaningsPLATAGRI_r9       | Agricultural plateau landscapes help to can relax my soul                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 120     | meaningsPLATAGRI_r10      | Agricultural plateau landscapes make me feeling comfortable                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 121     | meaningsPLATAGRI_r11      | Agricultural plateau landscapes are a symbol for an authentic landscape                                                                  | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 122     | meaningsPLATAGRI_r12      | Agricultural plateau landscapes represent an intact world                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 123     | meaningsPLATAGRI_r13      | Agricultural plateau landscapes help to experience myself                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 124     | meaningsPLATURB_r1        | Landscapes on the urban plateau are a symbol for human progress                                                                        | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 125     | meaningsPLATURB_r3        | Landscapes on the urban plateau represent the dominance of humans over nature                                                           | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 126     | meaningsPLATURB_r5        | Landscapes on the urban plateau represent scenic beauty                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 127     | meaningsPLATURB_r6        | Landscapes on the urban plateau offer sense of intimicy/familiarity                                                                       | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |
| 128     | meaningsPLATURB_r7        | Landscapes on the urban plateau help to recognize sense                                                                               | strongly   | disagree   | in between | agree      | strongly   | agree      | strongly   |

(continued on next page)
| Var_num | Var_code       | Var_descr                                                                 | 1     | 2     | 3     | 4     | 5     | 6     | 7     |
|---------|----------------|---------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| 129     | meaningsPLATURB_r9 | Landscapes on the urban plateau help to can relax my soul                | strongly disagree | disagree | in between | agree | strongly agree |
| 130     | meaningsPLATURB_r10 | Landscapes on the urban plateau make me feeling comfortable              | strongly disagree | disagree | in between | agree | strongly agree |
| 131     | meaningsPLATURB_r11 | Landscapes on the urban plateau are a symbol for an authentic landscape  | strongly disagree | disagree | in between | agree | strongly agree |
| 132     | meaningsPLATURB_r12 | Landscapes on the urban plateau represent an intact world                | strongly disagree | disagree | in between | agree | strongly agree |
| 133     | meaningsPLATURB_r13 | Landscapes on the urban plateau help to experience myself                | strongly disagree | disagree | in between | agree | strongly agree |
| 134     | meaningsJURA_r1   | Jura landscapes are a symbol for human progress                          | strongly disagree | disagree | in between | agree | strongly agree |
| 135     | meaningsJURA_r3   | Jura landscapes represent the dominance of humans over nature             | strongly disagree | disagree | in between | agree | strongly agree |
| 136     | meaningsJURA_r5   | Jura landscapes represent scenic beauty                                   | strongly disagree | disagree | in between | agree | strongly agree |
| 137     | meaningsJURA_r6   | Jura landscapes offer sense of intimacy/familiarity                       | strongly disagree | disagree | in between | agree | strongly agree |
| 138     | meaningsJURA_r7   | Jura landscapes help to recognize sense                                   | strongly disagree | disagree | in between | agree | strongly agree |
| 139     | meaningsJURA_r9   | Jura landscapes help to can relax my soul                                 | strongly disagree | disagree | in between | agree | strongly agree |
| 140     | meaningsJURA_r10  | Jura landscapes make me feeling comfortable                               | strongly disagree | disagree | in between | agree | strongly agree |
| 141     | meaningsJURA_r11  | Jura landscapes are a symbol for an authentic landscape                  | strongly disagree | disagree | in between | agree | strongly agree |
| 142     | meaningsJURA_r12  | Jura landscapes represent an intact world                                 | strongly disagree | disagree | in between | agree | strongly agree |
| 143     | meaningsJURA_r13  | Jura landscapes help to experience myself                                 | strongly disagree | disagree | in between | agree | strongly agree |
| 144     | meaningsALPVAL_r1 | Landscapes in urban alpine valleys are a symbol for human progress        | strongly disagree | disagree | in between | agree | strongly agree |
| 145     | meaningsALPVAL_r3 | Landscapes in urban alpine valleys represent the dominance of humans over nature | strongly disagree | disagree | in between | agree | strongly agree |
| 146     | meaningsALPVAL_r5 | Landscapes in urban alpine valleys represent scenic beauty                | strongly disagree | disagree | in between | agree | strongly agree |

(continued on next page)
| Var_num | Var_code  | Var_descr                                                                 | 1       | 2             | 3         | 4       | 5       | 6       | 7       |
|---------|-----------|---------------------------------------------------------------------------|---------|---------------|-----------|---------|---------|---------|---------|
| 147     | meaningsALPVAL_r6 | Landscapes in urban alpine valleys offer sense of intimacy/familiarity | strongly disagree | disagree | in between | agree    | strongly agree |
| 148     | meaningsALPVAL_r7 | Landscapes in urban alpine valleys help to recognize sense               | strongly disagree | disagree | in between | agree    | strongly agree |
| 149     | meaningsALPVAL_r9 | Landscapes in urban alpine valleys help to can relax my soul             | strongly disagree | disagree | in between | agree    | strongly agree |
| 150     | meaningsALPVAL_r10 | Landscapes in urban alpine valleys make me feeling comfortable          | strongly disagree | disagree | in between | agree    | strongly agree |
| 151     | meaningsALPVAL_r11 | Landscapes in urban alpine valleys are a symbol for an authentic landscape | strongly disagree | disagree | in between | agree    | strongly agree |
| 152     | meaningsALPVAL_r12 | Landscapes in urban alpine valleys represent an intact world            | strongly disagree | disagree | in between | agree    | strongly agree |
| 153     | meaningsALPVAL_r13 | Landscapes in urban alpine valleys help to experience myself            | strongly disagree | disagree | in between | agree    | strongly agree |
| 154     | WBTR3_r1   | Wind energy infrastructures in my living environment...                  | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 155     | WBTR3_r2   | Roof mounted PV in my living environment...                              | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 156     | WBTR3_r3   | Open space mounted PV in my living environment...                        | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 157     | LBTR3_r1   | Wind energy infrastructures in my recreation environment...              | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 158     | LBTR3_r2   | Roof mounted PV in my recreation environment...                          | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 159     | LBTR3_r3   | Open space mounted PV in my recreation environment...                   | are very disturbing | are disturbing | rather disturb | neither | rather like | like     | like it very much |
| 160     | WumgSEL   | Which of the following typical Swiss landscapes most closely represents the landscape of your living environment? | Alp | Northern prealps | Touristic alpine areas | Agricultural Plateau | Urban plateau | Jura ridges | Urban alpine valley |
| 161     | LumgSEL   | Which of the following typical Swiss landscapes most closely represents the landscape of your recreation environment? | Alp | Northern prealps | Touristic alpine areas | Agricultural Plateau | Urban plateau | Jura ridges | Urban alpine valley |
| 162     | WgeschKID | Which of the following typical Swiss landscapes most closely represents the landscape of your childhood? | Alp | Northern prealps | Touristic alpine areas | Agricultural Plateau | Urban plateau | Jura ridges | Urban alpine valley |
Table 2
Description of variables related to meanings ascribed to landscapes.

| Variable            | Description                                                                 | This landscape...                      | Response distribution (number, percentage) | Item descriptives |
|---------------------|-----------------------------------------------------------------------------|----------------------------------------|--------------------------------------------|------------------|
|                     |                                                                             | Strongly disagree | disagree | in between | agree | Strongly agree | Mean | SD |
| Arcadian landscape  |                                                                             | 1135 (9.0%) | 2127 (16.8%) | 2803 (22.1%) | 4082 (32.2%) | 2513 (19.9%) | 3.37  | 1.23 |
| perception          | Arcadian landscape perception represents scenic beauty.                     | 1135 (9.0%) | 2127 (16.8%) | 2803 (22.1%) | 4082 (32.2%) | 2513 (19.9%) | 3.37  | 1.23 |
| LSM_scenic-beauty   |                                                                             | 1135 (9.0%) | 2127 (16.8%) | 2803 (22.1%) | 4082 (32.2%) | 2513 (19.9%) | 3.37  | 1.23 |
| LSM_intimacy        | ...offers sense of intimicy/familiarity.                                     | 852 (6.7%)  | 1862 (14.7%) | 3340 (26.4%) | 4696 (37.1%) | 1910 (15.1%) | 3.39  | 1.11 |
| LSM_sense           | ...helps to recognize sense.                                                | 576 (4.5%)  | 1436 (11.3%) | 3513 (27.8%) | 5184 (40.9%) | 1951 (15.4%) | 3.51  | 1.03 |
| LSM_relax           | ...helps to can relax my soul.                                               | 916 (7.2%)  | 2064 (16.3%) | 2845 (22.5%) | 4520 (35.7%) | 2315 (18.3%) | 3.42  | 1.17 |
| LSM_comfortable     | ...makes me feeling comfortable.                                            | 594 (4.7%)  | 1619 (12.8%) | 3104 (24.5%) | 4983 (39.4%) | 2360 (18.6%) | 3.54  | 1.08 |
| LSM_authenticity    | ...is a symbol for an authentic landscape.                                  | 707 (5.6%)  | 1709 (13.5%) | 3228 (25.5%) | 4934 (39.0%) | 2082 (16.4%) | 3.47  | 1.09 |
| LSM_intact-world    | ...represents an intact world.                                               | 1170 (9.2%) | 2176 (17.2%) | 3066 (24.2%) | 4169 (32.9%) | 2079 (16.4%) | 3.30  | 1.20 |
| LSM_self-experience | ...helps to experience myself.                                               | 892 (7.0%)  | 2049 (16.2%) | 3666 (29.0%) | 4139 (32.7%) | 1914 (15.1%) | 3.33  | 1.13 |
| Utilitarian landscape perception |                                                                             | 1313 (10.4%) | 2507 (19.8%) | 3982 (31.4%) | 3762 (29.7%) | 1096 (8.7%)  | 3.06  | 1.12 |
| LSM_progress        | ...is a symbol for human progress.                                          | 1313 (10.4%) | 2507 (19.8%) | 3982 (31.4%) | 3762 (29.7%) | 1096 (8.7%)  | 3.06  | 1.12 |
| LSM_dominance       | ...represents the dominance of humans over nature.                          | 1687 (13.3%) | 2711 (21.4%) | 3100 (24.5%) | 3671 (29.0%) | 1491 (11.8%) | 3.04  | 1.23 |

LSM = Landscape meaning, SD = standard deviation, N = 12,660 choice observations.
How do you think the following energy infrastructures fit with these landscapes?

| Very poor | Poor | Fair | Good | Very good |
|-----------|------|------|------|-----------|
|           |      | 0    | 0    | 0         |
|           |      | 0    | 0    | 0         |
|           |      | 0    | 0    | 0         |
|           |      | 0    | 0    | 0         |

Fig. 2. Exemplary set of landscape-technology fit evaluation.

ings they ascribe to each of three renewable energy infrastructures (wind, PV ground, PV roof). A descriptive overview is provided in Table 3 (variables 57 to 83). As a consequence, people were asked to evaluate their personal feeling of the “fit” of each landscape/renewable energy infrastructure combination (variables 22 to 56). Within this landscape-technology fit evaluation photovoltaic infrastructure was separated into open space ground mounted PV and agricultural PV infrastructure. In addition, high voltage overhead power lines were integrated. For the evaluation, the landscape/energy infrastructure combination for each landscape was randomized in appearance. An exemplary illustration of the operationalized landscape-technology fit concept can be found in Fig. 2, while an overview of respondents evaluation can be found in Table 4. Lastly, people were asked about how they would feel if they would be exposed to renewable energy infrastructure in their living (items 154 to 156) and their recreation environment (items 157 to 159).

The second part of the online panel survey consisted of a discrete choice study in which respondents faced 15 consecutive choice tasks. Respondents were asked to choose among two landscape oriented renewable energy infrastructure alternatives and one opt-out option. Each of these alternatives (beside the opt-out option) had four attributes (landscape, wind energy infrastructure, PV infrastructure, power line infrastructure). Choice design, consecutive choice tasks and choice attributes are presented in Table 5. An exemplary choice task is illustrated in Salak et al. [2].

For reasons of confidentiality we anonymized the data by removing all fields that would enable personal identification. The complete questionnaire, the dataset and data description are available on the Environmental Data Platform EnviDat of the Swiss Federal Institute for Forest, Snow and Landscape Research WSL (https://doi.org/10.16904/envidat.206).

2. Experimental Design, Materials and Methods

The representative online panel survey was open for response from November 2018 to March 2019. Within this time, two reminders were sent. The survey targeted active Swiss panel members of panel operator BILENDI. In five months of operation we received a total of 1026...
Table 3
Description of items related to meanings ascribed to renewable energy infrastructure.

| Variable                        | Description                                                                 | Strongly disagree | disagree | in between | agree | Strongly agree | Meand SD |
|---------------------------------|-----------------------------------------------------------------------------|-------------------|----------|------------|-------|----------------|----------|
| **Meanings ascribed to wind energy infrastructure.** |                                                                             |                   |          |            |       |                |          |
| **Perceived contribution to sustainability** |                                                                             |                   |          |            |       |                |          |
| Wind_clean_energy               | ...provide clean energy.                                                     | 120 (0.9%)        | 375 (3.0%) | 1800 (14.2%) | 6435 (50.8%) | 3930 (31.0%) | 4.08 0.81 |
| Wind_create_jobs                | ...potential to create jobs.                                                | 405 (3.2%)        | 1245 (9.8%) | 3510 (27.7%) | 5655 (44.7%) | 1845 (14.6%) | 3.58 0.96 |
| Wind_support_local_economy      | ...support local economy.                                                   | 270 (2.1%)        | 960 (7.6%)  | 4155 (32.8%) | 5760 (45.5%) | 1515 (12.0%) | 3.58 0.87 |
| Wind_progress_humans            | ...represent the progress of humans.                                        | 435 (3.4%)        | 900 (7.1%)  | 3210 (25.4%) | 6255 (49.2%) | 1860 (14.7%) | 3.65 0.93 |
| Wind_solving_problems           | ...contribute to solving the most important problems of humanity.           | 870 (6.9%)        | 1635 (12.9%) | 3735 (29.5%) | 4845 (38.3%) | 1575 (12.4%) | 3.36 1.07 |
| Wind_awakening                  | ...represent awakening.                                                     | 525 (4.2%)        | 1140 (9.0%) | 3525 (27.8%) | 5415 (42.8%) | 2055 (16.2%) | 3.58 1.00 |
| **Perceived contribution to a mechanized world** |                                                                             |                   |          |            |       |                |          |
| Wind_no_replacement             | ...cannot replace other energy sources in Switzerland.                      | 945 (7.5%)        | 3135 (24.8%) | 3690 (29.1%) | 3660 (28.9%) | 1230 (9.7%)  | 3.09 1.10 |
| Wind_limited_yield              | ...deliver limited yield.                                                   | 420 (3.3%)        | 1875 (14.8%) | 3825 (30.2%) | 5250 (41.5%) | 1290 (10.2%) | 3.40 0.97 |
| Wind_distract                   | ...distract from really important measures.                                 | 1305 (10.3%)      | 3315 (26.2%) | 4365 (34.5%) | 2850 (22.5%) | 825 (6.5%)   | 2.89 1.07 |
| **Meanings ascribed to ground-mounted PV infrastructures.** |                                                                             |                   |          |            |       |                |          |
| **Perceived contribution to sustainability** |                                                                             |                   |          |            |       |                |          |
| PVground_clean_energy           | ...provide clean energy.                                                    | 225 (1.8%)        | 615 (4.9%)  | 2010 (15.9%) | 6345 (50.1%) | 3465 (27.4%) | 3.96 0.89 |
| PVground_create_jobs            | ...potential to create jobs.                                                | 285 (2.2%)        | 990 (7.8%)  | 3060 (24.2%) | 6315 (49.9%) | 2010 (15.9%) | 3.69 0.91 |
| PVground_support_local_economy  | ...support local economy.                                                   | 225 (1.8%)        | 780 (6.2%)  | 3615 (28.5%) | 6315 (49.9%) | 2175 (17.3%) | 3.67 0.85 |
| PVground_progress_humans        | ...represent the progress of humans.                                        | 255 (2.0%)        | 885 (7.0%)  | 2835 (22.4%) | 6570 (51.9%) | 2115 (16.7%) | 3.74 0.89 |
| PVground_solving_problems       | ...contribute to solving the most important problems of humanity.           | 660 (5.2%)        | 1440 (11.4%) | 3765 (29.7%) | 5310 (41.9%) | 1485 (11.7%) | 3.44 1.01 |
| PVground_awakening              | ...represent awakening.                                                     | 390 (3.1%)        | 975 (7.7%)  | 3645 (28.3%) | 5730 (45.3%) | 1920 (15.2%) | 3.62 0.94 |
| **Perceived contribution to a mechanized world** |                                                                             |                   |          |            |       |                |          |
| PVground_no_replacement         | ...cannot replace other energy sources in Switzerland.                      | 1035 (8.2%)       | 3315 (26.2%) | 3720 (29.0%) | 3585 (28.3%) | 1005 (7.9%)  | 3.02 1.09 |
| PVground_limited_yield          | ...deliver limited yield.                                                   | 525 (4.2%)        | 2175 (17.2%) | 4185 (33.1%) | 4740 (37.4%) | 1035 (8.2%)  | 3.28 0.98 |
| PVground_distract               | ...distract from really important measures.                                 | 1335 (10.5%)      | 3045 (24.1%) | 4560 (36.0%) | 3030 (23.9%) | 690 (5.5%)   | 2.90 1.05 |
| **Meanings ascribed to roof-mounted PV infrastructures.** |                                                                             |                   |          |            |       |                |          |
| **Perceived contribution to sustainability** |                                                                             |                   |          |            |       |                |          |
| PProof_clean_energy             | ...provide clean energy.                                                    | 180 (1.4%)        | 420 (3.3%)  | 1875 (14.8%) | 5820 (46.0%) | 4365 (34.5%) | 4.09 0.86 |
| PProof_create_jobs              | ...potential to create jobs.                                                | 225 (1.8%)        | 1050 (8.3%) | 2790 (22.0%) | 6240 (49.3%) | 2355 (18.6%) | 3.75 0.91 |
| PProof_support_local_economy    | ...support local economy.                                                   | 210 (1.7%)        | 645 (5.1%)  | 3090 (24.4%) | 6225 (49.2%) | 2490 (19.7%) | 3.80 0.87 |
| PProof_progress_humans          | ...represent the progress of humans.                                        | 210 (1.7%)        | 360 (2.8%)  | 2010 (15.9%) | 6750 (53.3%) | 3330 (26.3%) | 4.00 0.83 |
| PProof_solving_problems         | ...contribute to solving the most important problems of humanity.           | 450 (3.5%)        | 1080 (8.5%) | 3480 (27.5%) | 5535 (43.7%) | 2135 (16.7%) | 3.61 0.98 |
| PProof_awakening                | ...represent awakening.                                                     | 195 (1.5%)        | 555 (4.4%)  | 2565 (20.3%) | 6420 (50.7%) | 2925 (23.1%) | 3.89 0.86 |
| **Perceived contribution to a mechanized world** |                                                                             |                   |          |            |       |                |          |
| PProof_no_replacement           | ...cannot replace other energy sources in Switzerland.                      | 1230 (9.7%)       | 3480 (27.5%) | 3345 (26.4%) | 3480 (27.5%) | 1125 (8.9%)  | 2.98 1.14 |
| PProof_limited_yield            | ...deliver limited yield.                                                   | 510 (4.0%)        | 2340 (18.5%) | 4125 (32.6%) | 4560 (36.0%) | 1125 (8.9%)  | 3.27 0.99 |
| PProof_distract                 | ...distract from really important measures.                                 | 1785 (14.1%)      | 3570 (28.2%) | 3900 (30.8%) | 2610 (20.6%) | 795 (6.3%)   | 2.77 1.12 |

Note: SD = standard deviation, N = 12,660 choice observations.
### Table 4
Description of items related to landscape-technology fit.

| Variable         | Description                                                                 | Perceived fit of... | Response distribution (number, percentage) | Item descriptives |
|------------------|------------------------------------------------------------------------------|----------------------|--------------------------------------------|-------------------|
|                  |                                                                              |                      | very poor | poor | fair | good | very good | Mean | SD  |
| LTF_Wind         | ...wind energy infrastructure to presented landscape.                       |                      | 1876 (14.8%) | 2146 (17.0%) | 3044 (24.0%) | 3542 (28.0%) | 2052 (16.2%) | 3.14 | 1.29 |
| LTF_PVagri^a     | ...PV-infrastructure mounted on agricultural land to presented landscape.   |                      | 2394 (18.9%) | 2909 (23.0%) | 3154 (24.9%) | 2828 (22.3%) | 1375 (10.9%) | 2.83 | 1.27 |
| LTF_PVground^a   | ...PV-infrastructure mounted on other land to presented landscape.          |                      | 2102 (16.6%) | 2517 (19.9%) | 3354 (26.5%) | 3255 (25.7%) | 1432 (11.3%) | 2.95 | 1.25 |
| LTF_PVroof       | ...PV-infrastructure mounted on roofs to presented landscape.              |                      | 832 (6.6%) | 1037 (8.2%) | 1864 (14.7%) | 3426 (27.1%) | 5501 (43.5%) | 3.93 | 1.22 |
| LTF_Power-line   | ...power line infrastructure to presented landscape.                        |                      | 3160 (25.0%) | 2821 (22.3%) | 3301 (26.1%) | 2394 (18.9%) | 984 (7.8%) | 2.62 | 1.26 |

*Note:*

SD = standard deviation, LTF = Landscape-technology fit, N = 12,660 choice observations.

^a The mean of these two variables was used to create a new variable reflecting ground-based PV infrastructure.
Table 5
Description of choice tasks, choice attributes and attribute levels.

| Choice Task | Landscape | Wind     | PV       | PL   | Landscape | Wind     | PV       | PL   | opt out possibility |
|-------------|-----------|----------|----------|------|-----------|----------|----------|------|---------------------|
| 1           | 1         | 1        | 2        | 1    | 3         | 2        | 1        | Yes  |                     |
| 2           | 7         | 1        | 2        | 5    | 2         | 3        | 1        | Yes  |                     |
| 3           | 1         | 3        | 2        | 6    | 4         | 1        | 2        | Yes  |                     |
| 4           | 7         | 4        | 3        | 6    | 3         | 2        | 1        | Yes  |                     |
| 5           | 5         | 4        | 4        | 2    | 2         | 3        | 1        | Yes  |                     |
| 6           | 4         | 2        | 1        | 2    | 1         | 4        | 2        | Yes  |                     |
| 7           | 6         | 3        | 1        | 3    | 4         | 2        | 2        | Yes  |                     |
| 8           | 2         | 4        | 4        | 1    | 5         | 2        | 4        | Yes  |                     |
| 9           | 3         | 2        | 4        | 1    | 4         | 1        | 3        | Yes  |                     |
| 10          | 2         | 2        | 1        | 2    | 3         | 3        | 3        | Yes  |                     |
| 11          | 6         | 2        | 3        | 2    | 1         | 4        | 1        | Yes  |                     |
| 12          | 7         | 3        | 1        | 2    | 7         | 2        | 4        | Yes  |                     |
| 13          | 5         | 4        | 2        | 2    | 4         | 4        | 1        | Yes  |                     |
| 14          | 4         | 3        | 4        | 1    | 7         | 4        | 1        | Yes  |                     |
| 15          | 3         | 1        | 3        | 2    | 7         | 3        | 2        | Yes  |                     |

| Attribute Landscape | Wind energy infrastructure |
|----------------------|-----------------------------|
| 1 Alp                | No Wind energy infrastructure |
| 2 Pre_alp            | Low Level of wind infrastructure |
| 3 Alp_tour           | Medium level of wind infrastructure |
| 4 Plat_agri          | High level of wind infrastructure |
| 5 Plat_urb           | Urban plateau               |
| 6 Jura               | Jura ridges                 |
| 7 Alp_urb            | Urban alpine valley         |

| Attribute Photovoltaic infrastructure | Power line |
|---------------------------------------|------------|
| 1 No PV infrastructure                | Absence of high voltage overhead power lines |
| 2 Low level of PV infrastructure      | Presence of high voltage overhead power lines |
| 3 Medium level of PV infrastructure   |            |
| 4 High level of PV infrastructure     |            |
responses. We administered the online questionnaire with the hosting service provided by Sawtooth, while respondents were provided by panel operator BLENDI GmbH. For the layout of the questionnaire we used Sawtooth’s survey software Lighthouse Studio [3]. Data cleaning due to item-nonresponse led to a total number of 844 respondents (12,660 choice observations).

The questionnaire consisted of two main parts. The first part consisted of item-based questions regarding landscape and renewable energy infrastructure related aspects. The second part contained a stated choice experiment with fifteen consecutive choice tasks.

2.1. The item-based part

The first part of the questionnaire included questions regarding meanings ascribed to landscapes and renewable energy infrastructure, questions related to aspects of landscape-technology fit and questions examining the exposure of people to landscapes and renewable energy infrastructures. All items are presented in Table 1. Item description of items regarding landscape meanings, meanings ascribed to renewable energy infrastructure and landscape-technology fit are presented in Table 2, Table 3 and Table 4.

2.2. The choice experiment part

The choice experiment consisted of fifteen consecutive choice tasks. Ich each choice task respondents had to choose between three alternatives. Option 1 and 2 described mixed landscape related renewable energy scenarios (action), whereas option 3 described an opt-out (no-action). Relevant attributes and credible attribute levels were developed based literature research, project meetings and workshops with the project steering group from different disciplines. We identified four relevant attributes and the respective levels. The choice design was generated with Ngene software [4] and was designed as D-efficient design that varies the attribute levels in Options 1 and 2. Attribute, attribute levels and the generated choice design are presented in Table 5. A detailed description of the attribute levels and the choice experiment can be found in the accompanying publication [2].

Ethics Statement

The participation in the survey was operated and organized by a panel provider. Respondent participation was voluntary and respondents were informed that the data will be analyzed anonymously. Data collection and handling were implemented in accordance with the social data gathering ethics regulations of the institution conducting this research.

CRediT Author Statement

Salak B.: Resources, Methodology, Conceptualization, Formal analysis, Investigation, Data Curation, Visualization, Writing - original draft; Lindberg K.: Methodology, Formal analysis, Writing - review & editing, Software, Validation; Kienast F.: Funding acquisition, Conceptualization, Writing - review & editing, Validation; Hunziker M.: Funding acquisition, Project administration, Conceptualization, Writing - review & editing, Validation, Supervision.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships which have or could be perceived to have influenced the work reported in this article.
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Visualizations used for the DCM in this study were developed within the mentioned Project ENERGYSCAPE and were developed in a leading role by Ulrike Wissen, Reto Spielhofer and Adrienne Grêt-Régamey (Swiss Federal Institute of Technology).

Supplementary Materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.dib.2021.107025.

References

[1] R. Spielhofer, T. Thrash, U.W. Hayek, A. Grêt-Regamey, B. Salak, J. Grübel, V.R. Schinazi, Physiological and behavioral reactions to renewable energy systems in various landscape types, Renew. Sustain. Energy Rev. 135 (2021) 110410, doi:10.1016/j.rser.2020.110410.
[2] B. Salak, K. Lindberg, F. Kienast, M. Hunziker, How landscape-technology fit affects public evaluations of renewable energy infrastructure scenarios. A hybrid choice model, Renew. Sustain. Energy Rev. 143 (2021) 107025, doi:10.1016/j.rser.2021.110896.
[3] Sawtooth SoftwareLighthouse studio Manual, 2018 https://sawtoothsoftware.com/help/lighthouse-studio/manual/.
[4] ChoiceMetricsNgene user manual & reference guide, 2018 http://www.choice-metrics.com/NgeneManual120.pdf.