# Resource Data Template Version 2.1: User Guide

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Integrated Resource Planning and Energy Resource Modeling Sections,

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## 1. Introduction

This document is a user guide to the new Resource Data Template (RDT) version 2.1 (RDTv2x1). RDT version 2 (RDTv2) was first used by the California Public Utilities Commission (CPUC) to collect Load Serving Entity (LSE) compliance data for the Fall of 2021 data submission.

RDTv2x1, which this user guide covers, is similar to RDTv2 with some minor updates and a few additional fields. This user guide is intended to be the primary document instructing the user on the proper use of RDTv2x1.

This user guide does not contain the actual dates for any compliance obligations, for example, the contract cutoff date corresponding to finalization of the resource table, or any other compliance obligation due dates. Those dates and any other significant compliance obligation details including the reporting period over which the LSEs are required to submit data are contained in a separate document: February 2022 IRP Data Request Overview.

## 2. Differences from Previous Version

RDTv2x1 is similar to RDTv2 with some minor updates and a few additional fields as follows:

- **Updated resources:** All generic resources now preceded by '_' character. LSEs can still use old values for resources.

- **New fields:** "caiso_queue_position", "developer_name", "d2106035_tranche" have been added to the template. Please review the detailed instruction in section 9 for these new fields.
- **Rename field:** "signed_contract_new_construction" renamed to "signed_contract"
- **Remove field:** "signed_contract_between_lses_dr_import" has been removed.
- **Updated/clarifying instructions:** Some of the fields (including "marginal_addition") have been changed with updated/clarifying instructions. Please see the detailed instruction in section 9.

## 3. Submission Date

The Submission date, and detailed filing instructions, are defined in a separate document: <u>February 2022 IRP Data Request Overview.</u>

## 4. Resources

RDT defines a list of valid resource names. This list is defined as of the Cutoff Date defined in the contract status section, below. In RDTv2x1 this list is located in RDTv2x1.Resources.resource. This list contains specified physical resources, unspecified resources that are delivered over a specific transmission branch group, or unspecified resources that are from a specific competitive renewable energy zone (CREZ). There are also options for resources that have less specific information.

Creating a Resources List presents challenges, including a date by which resources are considered online for purposes of IRP compliance, the source of data as it relates to format and categorization, and how complete the list is related to resources that are planned or coming online.

The types of resource names in the resource list are:

- Baseline resources (either CAISO ID, ADS name, RPS name, name from the Mid-Term Reliability dataset, or other name like DR program)
- Branch Group names of the form "GENERIC_BRANCH_branchname" where "branchname" is the name of the transmission branch name.
- CREZ names of the form "GENERIC_CREZ_crezname" where "crezname" is the name of the CREZ.
- Unbundled recs from a particular CREZ of the form "UNBUNDLED_crezname."
- Special case values ("unspecified", "unbundledrec", "sellerschoice")

## 5. Contract Status

"contract_status" takes one of the following values: Online, Development, Review, Plannedexisting and Plannednew. These are the only accepted values for "contract_status" (case insensitive). The meanings of these terms are defined in the table below.

| contract_status | Meaning |
|---|---|
| Online | Contract has been signed (or LSE owns the resource) and the resource is online as of Cutoff Date. The Cutoff Date is defined in the February 2022 IRP Data Request Overview. |
| Development | Contract has been signed and approved by CPUC and/or LSE's highest decision-making authority as applicable (or LSE owns the resource), but resource is still under development and not yet online (as of Cutoff Date). |
| Review | Contract has been selected and is under review by LSE's highest decision-making authority (e.g. board of directors) as of final resource table Cutoff Date. For LSE-owned resources, this means that the decision-making authority is reviewing whether to authorize an LSE-owned resource. This includes contracts shortlisted as a result of an RFO or a similar procurement method. It can also include bilateral contracts not resulting from a Request for Offer (RFO). |
| Plannedexisting | Contract is not yet (as of Cutoff Date) in force and resource has a valid Resource ID in the resources table (RDTv2x1.resources.resource) |
| Plannednew | Contract is not yet (as of Cutoff Date) in force and resource does not have a valid Resource ID in the resources table (RDTv2x1.resources.resource) |

## 6. Supertype

Supertype is a property that is defined for each physical or generic resource defined in the resources table (RDTv2x1.resources.supertype). The table below defines meanings for the various supertypes.

| supertype | Meaning |
|---|---|
| physical | A specific existing resource. |
| existinggeneric | Unspecified existing physical resource |
| newresolve | New resource that can be mapped to a particular CREZ |
| newgeneric | New resource that cannot be mapped to a particular CREZ or for which the LSE has not planned to procure a particular technology |
| newloadmod | New load modifier resource |
| specifiedimport | Specific existing resource with a CAISO ID that is imported from outside of the CAISO. |

| supplierschoice | LSE buys capacity/energy from a non-LSE entity that is able to provide a mix of resources that are not predetermined in a contract |
|---|---|
| unbundledrec | A contract for Renewable Energy Credits, not unit specific energy, that is not actually delivered to CAISO. There is no energy or capacity product associated with this contract, and this is primarily for RPS compliance |
| unspecifiedimport | Imports from outside of the CAISO, delivered over a particular intertie branch group. Resource mix not known. |
| unspecifiednonimport | A contract for a quantity of energy that is not unit specific, sourced from capacity within the CAISO |

## 7. Key Relationships

For each entry in the RDT, there are several important relationships that must be maintained between certain fields within the input tables.

**1) supertype-to-contract_status:** For every value of supertype, "contract_status" can take the values indicated in the table below. Any other choice will be flagged as an error.

**2) Special Cases, or special supertypes:** All supertypes besides those corresponding to physical resources trigger the need for additional information as indicated in the table below. For all supertypes, the LSE must fill out the additional required columns in the "unique_contracts" table. RDT will not alert you to needing to fill out these extra columns. Each LSE needs to identify the additional columns that need to be filled out based on any supertype other than physical. Omission of any required additional columns fields will be flagged as an error.

| supertype | contract_status | Additional Required Columns |
|---|---|---|
| physical | Online, Development, Plannedexisting | |
| existinggeneric | Online, Plannedexisting | special_mix, Special_Resource_Nameplate |
| newresolve | Online, Development, Review, Plannednew | special_mix, Special_Resource_Nameplate |
| newgeneric | Online, Development, Review, Plannednew | special_mix, Special_Resource_Nameplate |
| newloadmod | Online, Development, Review, Plannednew | special_mix, Special_Resource_Nameplate |
| specifiedimport | Online, Plannedexisting | |

| supplierschoice | Online, Plannedexisting | special_generator_supplier, special_mix, special_resource_nameplate |
|---|---|---|
| unbundledrec | Online, Plannedexisting | special_mix |
| unspecifiedimport | Online, Plannedexisting | special_mix, special_resource_nameplate |
| unspecifiednonimpor | Online, Plannedexisting | special_mix, special_resource_nameplate |

**Special fields definitions:**

**Special_counterparty:** drop down list of "lse" names, from RDTv2x1.lse_names.lse

**special_generator_supplier:** Name of non-LSE supplier selling capacity. No drop down. Please capitalize all names, include no special characters, and underscore instead of spaces between words. This field is only for purchases where the specific resource is not specified or can be a mix of more than one resource

**Special_Resource_Nameplate:** Estimated nameplate of the new resource in MW. Please only provide the numerical value (do not put 'MW' in the cell). This field is also used for non-unit specific import and non-unit specific non-import contracts and "supplierschoice" contracts. In the event of energy only contracts, please estimate the nameplate of the resource, and enter 0 in the contracted_nqc_mw_if_known or nqc_fraction_if_nqc_not_known fields.

**Special_mix:** technology mix of energy making up a contract. Please specify "special_mix" of the particular technology mix in the following form, using characters [ and ] as well as commas to delineate values within square brackets, as shown: "[techtype1, value1] [techtype2, value2]". See additional examples below. For techtype please use only the following values (case insensitive). No other values will be allowed: **thermal, solar, wind, wind_low_cf, wind_hi_cf, hydro, battery, geothermal, biogas, biomass, ct, ccgt, chp, nuclear, dr, other, unknown**. Please map technology type for each resource within mix to one of these values. The sum of values should either equal the total MW of the contract, or one, that is to say the values (value1, value2, etc) can either correspond to MW values corresponding to each resource in the mix, or fractions of total contract MW. For example: "[solar, 11] [battery, 2]" or "[wind_low_cf, .93] [battery, .07]".

## 8. Instructions for specific resources

- **D.19-11-016**: If an LSE opted-out of its procurement obligation under D.19-11-016, or was not assigned a procurement obligation under D.19-11-016, should not report. IOUs procuring on behalf of opt-out LSEs and those LSEs that were not assigned a procurement obligation should report the full occurring procurement.

- **Inter LSE Transfers:** Transfers are to be entered by selecting the resource being either purchased or sold in the **resource** column (selected from the drop-down list), indicating whether it is a purchase or a sale in the "**buy_or_sell**" field, and selecting the counterparty from the drop-down list in the "**special_counterparty**" column. If the resource is being sold by the LSE to a non-LSE counterparty, select "non-LSE counterparty" from the drop-down list.
- **suppliers_choice**: This listing is only for when the LSE is purchasing from a non-LSE counterparty AND the resource being procured is not unit specific or the LSE does not know the specific mix of generation. If the counterparty is an LSE, then please follow directions for either unspecified import or unspecified non-import resources. In the event of a supplier's choice, the LSE is requested to select "suppliers_choice" in the drop down in the resource tab and use the **special_generator_supplier** field to name the non-LSE supplier with whom the LSE has a contract. Please also use the **special_mix** field to describe the estimated mix of resource types in the contract. Also estimate a special _resource_nameplate for the contract.
- **Resources with changing operational characteristics over the course of the time horizon**: Some resources, like a hybrid resource that will charge from the grid in later years, may have operational characteristics that change over the course of the time horizon. In these cases, please enter them as two (or more) separate lines in the "unique_contracts" table.
- **Marginal additions:** Marginal additions refer to the resources that their capacity has been expanded (e.g. adding batteries to an existing solar facility, adding additional generators to an existing facility, …) over the reporting time frame. For these resources, LSEs would still report the total NQC but indicate expansion using the provided columns in the "unique_contracts" table. As an example, consider a storage resource that gets expanded with additional storage capacity in 2025:

| | lse_unique_contract_id | resource | marginal_addition |
|---|---|---|---|
| Before expansion | id_A | Resource name | Leave blank |
| After expansion | Id_B | Resource name | Follow the instruction in section 9 |

## 9. Instructions for Filling Out Tables

Note that the only place where LSE name and MMT selection are indicated is in the submitted Excel workbook filename There are two tables to fill out: "unique_contracts", and "monthly_gwh_mw". Please note that all the values should be entered as positive numbers.

The following tables give detailed instructions for each table:

**Column names for table unique_contracts:**

| Column Name | Instructions |
|---|---|
| lse_unique_contract_id | An identifier provided by the LSE to distinguish unique contracts with a given resource. Where possible, please use the same "cpuc_contract_id" you used in your 2020 RDT. |
| resource | The resource name, which must come from list RDTv2x1.resources.resource. |
| alternative_resource_name | Please provide other names that this project has or had if any. If more than one, please separate them with comma. |
| contract_status | Status showing maturity of contracting process for this resource: One of online, development, review, plannedexisting or plannednew, as defined above. |
| caiso_queue_position | Please proved the CAISO Queue Position or WDAT Identifier for each resource that has one |
| lse_owned | Is the resource owned by the LSE? Drop down list: yes, no |
| marginal_addition | If the contracted resource includes one or more marginal additions to an existing resource, report NQC value(s) attributable to each marginal addition in September for the first year of contract delivery, separated by semicolons. Note that space characters can be used at your discretion. For example:<br><br>20.9; 2.0<br><br>If the marginal addition name is different than the existing resource name, enter the name for the marginal addition followed by the NQC value(s) attributable to the marginal addition(s) in September for the first year of contract delivery, separated by commas. Separate name-NQC pairs with semicolons. For example:<br><br>"ExampleName", 14.5; 3.0 |

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| | If the contracted resource does not include any marginal additions, leave this column blank. |
| viability_cod_reasonableness | Choose 1 - 4 below to report on project viability. This is only necessary for projects not online yet.<br><br>4 - Interconnection studies complete and agreement signed consistent with reported COD; permitting application complete.<br><br>3 - Interconnection Phase II study complete; permitting application approved; these support reported COD.<br><br>2 - Interconnection Phase II study in progress; permitting application in progress; LSE has plan that supports reported COD.<br><br>1 - Interconnection Phase II study not begun. |
| viability_technical_feasibility | Choose 1 – 3 below to report on technical feasibility. This is only necessary for resources not online yet.<br><br>3. Project-specific independent engineering assessment is complete and supports the delivery profile (capacity and/or production) AND Project uses commercialized technology.<br><br>2 - Project will use a commercialized technology solution that is currently in use at a minimum of two operating facilities of similar or larger size.<br><br>1 – Project uses NEITHER commercialized technology NOR has project specific engineering assessment. |
| viability_financing_sitecontrol | Choose 1 - 5 or N/A below to report on financing. This is only necessary for resources not yet online.<br><br>5 - All Financing Secured.<br><br>4 - Partial Financing Secured.<br><br>3 - Seeking Financing. |

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| | 2 – Project has site control but not Yet Seeking Financing. |
| | 1 – Project does not yet have site control. |
| | N/A-No Financing Required. |
| storage_max_discharge_mw | If the resource is a standalone storage or a hybrid (generator + storage) resource, report the battery's maximum rate of discharge in MW here. |
| storage_depth_mwh | If the resource is a standalone storage or a hybrid (generator + storage) resource, report the storage total depth in MWh here. |
| is_hybrid | Drop down list; "no" and possible hybrid technology combinations.<br><br>1. Not Hybrid<br>2. existing biomass + existing storage<br>3. existing biomass + new storage<br>4. existing geothermal + existing storage<br>5. existing geothermal + new storage<br>6. existing solar + existing storage<br>7. existing solar + new storage<br>8. existing thermal + existing storage<br>9. existing thermal + new storage<br>10. existing wind_high_cf + existing storage<br>11. existing wind_high_cf + new storage<br>12. existing wind_low_cf + existing storage<br>13. existing wind_low_cf + new storage<br>14. new biomass + existing storage<br>15. new biomass + new storage<br>16. new geothermal + existing storage<br>17. new geothermal + new storage<br>18. new solar + existing storage<br>19. new solar + new storage<br>20. new thermal + existing storage<br>21. new thermal + new storage<br>22. new wind_high_cf + existing storage |

| | 23. new wind_high_cf + new storage<br>24. new wind_low_cf + existing storage<br>25. new wind_low_cf + new storage |
|---|---|
| hybrid_generator_mw | A hybrid resource consists of a generator and storage. This is the nameplate of the generator portion of the resource, in MW. Only report this for hybrid or co-located resources. |
| hybrid_combined_max_mw | The maximum rate the hybrid resource can send energy to the grid. In most cases this will be close to the sum of the generator portion of the hybrid, plus the battery portion of the hybrid. |
| hybrid_can_charge_from_grid | Drop down list: yes, no. "Yes" for when storage can charge from grid AND paired resource. "No" for when storage can ONLY charge from paired resource |
| storage_duration_hours | The number of MWh that the battery is capable of storing |
| special_mix | technology mix of energy making up a contract. Please specify special_mix of the particular technology mix in the following form: [techtype1, value1] [techtype2, value2]... For techtype please use only the following values (case insensitive): thermal, solar, wind_low_cf, hydro, battery, geothermal, biomass, nuclear. The sum of values should either equal the total MW of the contract, or one, that is to say the values (value1, value2, etc) can either correspond to MW values or fractions of total contract MW. |
| special_resource_nameplate | Provide the resource's nameplate in MW |
| Buy_or_sell | Drop down list: Buy, Sell, N/A |
| special_counterparty | drop down list of lse names, from RDTv2x1.lse_names.lse |
| special_generator_supplier | Name of supplier selling capacity. No drop down. Please capitalize all names, include no special characters, and underscore instead of spaces between words. |
| developer_name | If the project is new construction, please enter the name of the developer. If the project is not new construction, please enter "na" |

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|---|---|
| capacity_area | Drop down list; Options include CAISO local areas, PTO area in CAISO if not Local Area, or PTO of interconnection in WECC if not in CAISO. |
| cpuc_approval_ref | Insert the Decision # or Advice Letter # by which the resource was approved by the CPUC, if applicable. If pending approval by the CPUC, enter "FILED". If submitting an executed contract even though CPUC does not need to approve, enter "SUBMITTED". |
| county | Select the county the project is located in from the drop down list. If the project is not located in California, select the state it is located in.<br><br>Drop down list; counties in CA, other states in WECC |
| COD_year | Enter the commercial operation date of the project (year) If the project is not yet online, enter the projected COD.<br><br>Drop down list: 1990 - 2030 |
| COD_month | Enter the commercial operation date of the project (month) If the project is not yet online, enter the projected COD.<br><br>Drop down list: 1-12 |
| COD_day | Enter the commercial operation date of the project (day) If the project is not yet online, enter the projected COD.<br><br>Drop down list: 1-31 |
| contract_end_date_year | Enter the date (year) when energy/capacity deliveries are contracted to end, or planned to end if the project is yet contracted.<br><br>Drop down list: 2020-2050 |
| contract_end_date_month | Enter the date (month) when energy/capacity deliveries are contracted to end, or planned to end if the project is yet contracted.<br><br>Drop down list: 1-12 |
| Contract_end_date_day | Enter the date (day) when energy/capacity deliveries are contracted to end, or planned to end if the project is yet contracted. |

| | Drop down list: 1-31 |
|---|---|
| contract_execution_date_year | Enter the date (year) when the contract was executed. If the contract has not been executed, enter "N/A".<br><br>Drop down list, "N/A", 1990-2050 |
| contract_execution_date_month | Enter the date (month) when the contract was executed. If the contract has not been executed, enter "N/A".<br><br>Drop down list, "N/A", 1-12 |
| contract_execution_date_day | Enter the date (day) when the contract was executed. If the contract has not been executed, enter "N/A".<br><br>Drop down list, "N/A", 1-31 |
| d1911016_tranche | Please indicate using the drop-down list whether this project satisfies tranche requirements per D.19-11-016. If this project does not count toward D.19-11-016 requirements, enter N/A. Select only tranches applicable to this project (do not select multiple tranches unless applicable). Projects will only be counted towards a tranche obligation where indicated.<br><br>Drop down list:<br><br>N/A,<br><br>1,<br><br>2,<br><br>3,<br><br>1 & 2,<br><br>1 & 2 & 3,<br><br>1 & 3,<br><br>2 & 3 |

| | |
|---|---|
| d2106035_tranche | Please indicate using the drop-down list whether this project satisfies tranche requirements per D.21-06-035. If this project does not count toward D.21-06-035 requirements, enter N/A.  Select only tranches applicable to this project (do not select multiple tranches unless applicable). Projects will only be counted towards a tranche obligation where indicated. This is not a formal compliance filing for D.21-06-035 and this data will only be used for project tracking purposes.<br><br>Please choose the year based upon the obligation you are meeting (not the online year if the resource will be online early).<br><br>"general" refers to procurement that does not meet any of the specific attribute requirements in D.21-06-035.<br><br>"ZE_gen_paired_dr" refers to the procurement category: Zero-emissions generation, generation paired with storage, or demand response resources, required by 2025, not necessarily in 2025<br><br>"long_duration_storage" refers to Long-duration storage resource procurement category due by 2026, with the possibility of extension to 2028 (choose _ext only if extension has been granted by CPUC).<br><br>"firm_ZE" refers to firm zero-emitting resource procurement category due by 2026, with the possibility of extension to 2028 (choose _ext only if extension has been granted by CPUC).<br><br>Drop down list: |

| | |
|---|---|
| | 2023_general |
| | 2024_general |
| | 2025_general |
| | 2023_ZE_gen_paired_dr |
| | 2024_ZE_gen_paired_dr |
| | 2025_ZE_gen_paired_dr |
| | 2026_long_duration_storage |
| | 2027_long_duration_storage_ext |
| | 2028_long_duration_storage_ext |
| | 2026_firm_ZE |
| | 2027_firm_ZE_ext |
| | 2028_firm_ZE_ext |
| previous_COD_year | If this project was included on a previous D.19-11-016 backstop procurement progress report template or other CPUC filing, please indicate the previously submitted COD (year). If this has not been included on a previous report, , enter "N/A". If this project is not counted toward D.19-11-016, please leave this field blank.<br><br>Drop down list, "N/A", 1990-2050. |
| previous_COD_month | If this project was included on a previous D.19-11-016 backstop procurement progress report template or other CPUC filing, please indicate the previously submitted COD (month). If this has not been included on a previous report, , enter "N/A". If this project is not counted toward D.19-11-016, please leave this field blank.<br><br>Drop down list, "N/A", 1-12 |
| previous_COD_day | If this project was included on a previous D.19-11-016 backstop procurement progress report template or other CPUC filing, please indicate the previously submitted COD |

| | |
|---|---|
| | (day). If this has not been included on a previous report, , enter "N/A". If this project is not counted toward D.19-11-016, please leave this field blank.<br><br>Drop down list, "N/A",1-31 |
| remediation_plan | Please indicate whether you are submitting a remediation plan with this report. This indicates that the project has failed to meet one or more milestone requirements on time.<br><br>Drop down list; "yes","no", "na". If this project is not counted toward D.19-11-016, please choose n/a. |
| signed_contract | Indicate whether or not an executed contract with the entity with contractual rights to the resource for a commercially viable technology exists. If this project is counted toward D.19-11-016, you must submit this contract to the CPUC with this report, unless you have submitted the contract with a previous report and it has not been since modified.<br><br>No indicates the project does not yet have an executed contract.<br><br>Drop down list; "yes","no" |
| notice_to_proceed | Indicate whether or not a "notice to proceed" or similar contractual evidence of construction has been submitted to the CPUC with this report. If this project is not counted toward D.19-11-016, please leave this field blank.<br><br>Drop down list; "yes","no" |
| public_contract | Is this contract publicly announced? Drop down list: yes, no |
| LSE buying energy/capacity from this resource? | drop-down options of "Energy/Capacity, Only Energy, Only Capacity" |
| macro_supertype | This is a field reserved for RDTv2x1 macro use. Please do not enter any data into this field. This field will be automatically populated with supertype value by RDTv2x1 macro based on supertype value (RDTv2x1.resources.resource_supertype) corresponding to resource name. |

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|---|---|
| Notes | Any additional information that LSEs want to provide and was not captured in the existing fields. |

**Colum names for table Monthly_gwh_mw:**

| Column Name | Instructions |
|---|---|
| resource | Must correspond to resource name used in unique_contracts |
| lse_unique_contract_id | Must correspond to lse_unique_contract_id used in unique_contracts. |
| Year | Year of the energy/capacity procured |
| Month | Month of the energy/capacity procured |
| contract_gwh | Enter the amount of energy contracted for, in GWh. If this is an RA only contract, enter zero here. Do not leave this blank. |
| contracted_nqc_mw_if_known | If the contract for this resource in this year and month contains an Net Qualifying Capacity (NQC) value that counts for Resource Adequacy (RA) credit, report it here in MW. DO NOT estimate this value if it is not explicitly reported in the contract. If the contract is energy only, enter 0 here. If you plan to buy capacity value but do not know the NQC (for example, because this is a to-be-built future resource), leave this column blank and use the nqc_fraction_if_nqc_not_known instead to report capacity. |
| nqc_fraction_if_nqc_not_known | Report if a contract is for RA capacity for a resource that either does not exist yet, or does not have a known NQC value. Please enter a fraction between 0 and 1, where 0 means the contract is completely energy-only, and 1 means all available RA capacity value from the contracted resource. 0.5 means that the LSE is planning to purchase capacity value corresponding to half of total capacity value that is available. ONLY fill this field out if you plan on transacting purchasing capacity value, but can not filled out the contracted_nqc_mw_if_known column. If you filled out contracted_nqc_mw already, leave this blank. |