

# **ERCOT Load Profiling Guide**

**June 1, 2017**

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# **ERCOT Load Profiling Guide**

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# **ERCOT Load Profiling Guide**

## **Section 1: Introduction**

**November 1, 2016**

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**1 INTRODUCTION ..... 1-1**

## **1 INTRODUCTION**

- (1) Load Profiling, within the ERCOT market, is the practice of estimating 15-minute interval Load for Customers where interval consumption is not available. The purpose of the Electric Reliability Council of Texas (ERCOT) Load Profiling Guide (LPG) is to explicate the language and intent in the Protocols that affect Load Profiling. It is not a substitute for the ERCOT Protocols or the Public Utility Commission of Texas (PUCT) Substantive Rules. In the event of a conflict of Protocols or PUCT Substantive Rules, the Protocols and PUCT Substantive Rules take precedence over the LPG.



**ERCOT Load Profiling Guide**  
**Section 2: Load Profiling Guide Revision Process**

**June 1, 2017**

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## **2 LOAD PROFILING GUIDE REVISION PROCESS**

### **2.1 Introduction**

- (1) A request to make additions, edits, deletions, revisions, or clarifications to this Load Profiling Guide (LPG), including any attachments and exhibits to this LPG, is called a Load Profiling Guide Revision Request (LPGRR). Except as specifically provided in other sections of this LPG, this Section 2, Load Profiling Guide Revision Process, shall be followed for all LPGRRs. ERCOT Members, Market Participants, Public Utility Commission of Texas (PUCT) Staff, the Reliability Monitor, the Independent Market Monitor (IMM), the North American Electric Reliability Cooperation (NERC) Regional Entity, ERCOT, and any other Entities are required to utilize the process described herein prior to requesting, through the PUCT or other Governmental Authority, that ERCOT make a change to this LPG, except for good cause shown to the PUCT or other Governmental Authority.
- (2) The “next regularly scheduled meeting” of the Commercial Operations Subcommittee (COPS), Technical Advisory Committee (TAC), or the ERCOT Board shall mean the next regularly scheduled meeting for which required Notice can be timely given regarding the item(s) to be addressed, as specified in the appropriate ERCOT Board or committee procedures.
- (3) COPS shall ensure that the LPG is compliant with the ERCOT Protocols. As such, COPS will monitor all changes to the ERCOT Protocols and initiate the process for any LPGRRs necessary to bring the LPG in conformance with the ERCOT Protocols. COPS will also initiate the process for a Nodal Protocol Revision Request (NPRR) if such a change is necessary to accommodate a proposed LPGRR prior to proceeding with that LPGRR.
- (4) Throughout the LPG, references are made to the ERCOT Protocols. ERCOT Protocols supersede the LPG and any LPGRRs must be compliant with the ERCOT Protocols. The ERCOT Protocols are subject to the revision process outlined in Protocol Section 21, Revision Request Process.
- (5) ERCOT may make non-substantive corrections at any time during the processing of a particular LPGRR. Under certain circumstances, however, the LPG can also be revised by ERCOT rather than using the LPGRR process outlined in this Section.
  - (a) This type of revision is referred to as an “Administrative LPGRR” or “Administrative Changes” and shall consist of non-substantive corrections, such as typos (excluding grammatical changes), internal references (including table of contents), improper use of acronyms, references to ERCOT Protocols, PUCT Substantive Rules, the Public Utility Regulatory Act (PURA), NERC regulations, Federal Energy

Regulatory Commission (FERC) rules, etc., and revisions for the purpose of maintaining consistency between Section 2 and Protocol Section 21.

- (b) ERCOT shall post such Administrative LPGRRs to the ERCOT website and distribute the LPGRRs to COPS at least ten Business Days before implementation. If no Entity submits comments to the Administrative LPGRR in accordance with paragraph (1) of Section 2.3.3, COPS Review and Action, ERCOT shall implement it according to paragraph (4) of Section 2.6, Load Profiling Guide Revision Implementation. If any ERCOT Member, Market Participant, PUCT Staff, Reliability Monitor, NERC Regional Entity, the IMM, or ERCOT submits comments to the Administrative LPGRR, then it shall be processed in accordance with the LPGRR process outlined in this Section 2.

## **2.2 Submission of Load Profiling Guide Revision Request**

- (1) The following Entities may submit a Load Profiling Guide Revision Request (LPGRR):
  - (a) Any Market Participant;
  - (b) Any ERCOT Member;
  - (c) Public Utility Commission of Texas (PUCT) Staff;
  - (d) The Reliability Monitor;
  - (e) The North American Reliability Corporation (NERC) Regional Entity;
  - (f) The Independent Market Monitor (IMM);
  - (g) ERCOT; and
  - (h) Any other Entity who resides (or represents residents) in Texas or operates in the Texas electricity market.

## **2.3 Load Profiling Guide Revision Procedure**

### ***2.3.1 Review and Posting of Load Profiling Guide Revision Requests***

- (1) Load Profiling Guide Revision Requests (LPGRRs) shall be submitted electronically to ERCOT by completing the designated form provided on the ERCOT website. Excluding ERCOT-sponsored LPGRRs, ERCOT shall provide an electronic return receipt response to the submitter upon receipt of the LPGRR.
- (2) The LPGRR shall include the following information:

- (a) Description of requested revision and reason for suggested change;
  - (b) Impacts and benefits of the suggested change on ERCOT market structure, ERCOT operations, and Market Participants, to the extent that the submitter may know this information;
  - (c) List of affected Load Profiling Guide (LPG) sections and subsections;
  - (d) General administrative information (organization, contact name, etc.); and
  - (e) Suggested language for requested revision.
- (3) ERCOT shall evaluate the LPGRR for completeness and shall notify the submitter within five Business Days of receipt if the LPGRR is incomplete, including the reasons for such status. ERCOT may provide information to the submitter that will correct the LPGRR and render it complete. An incomplete LPGRR shall not receive further consideration until it is completed. In order to pursue the LPGRR, a submitter must submit a completed version of the LPGRR.
- (4) If a submitted LPGRR is complete or upon completion of an LPGRR, ERCOT shall post the LPGRR on the ERCOT website and distribute to the Commercial Operations Subcommittee (COPS) within three Business Days.
- (5) For any ERCOT-sponsored LPGRR, ERCOT shall also post an initial Impact Analysis on the ERCOT website, and distribute it to COPS. The initial Impact Analysis will provide COPS with guidance as to potential ERCOT computer systems, operations, or business functions that could be affected by the submitted LPGRR.

### ***2.3.2 Withdrawal of a Load Profiling Guide Revision Request***

- (1) A submitter may withdraw or request to withdraw an LPGRR by submitting a completed Request for Withdrawal form provided on the ERCOT website. ERCOT shall post the submitter's Request for Withdrawal on the ERCOT website within three Business Days of submittal.
- (2) The submitter of an LPGRR may withdraw the LPGRR at any time before COPS recommends approval of the LPGRR.
- (3) If COPS has recommended approval of the LPGRR, the Request for Withdrawal must be approved by the Technical Advisory Committee (TAC) if the LPGRR has not yet been approved or recommended for approval by TAC.
- (4) If TAC has recommended approval of an LPGRR, the Request for Withdrawal must be approved by the ERCOT Board if the LPGRR has not yet been approved by the ERCOT Board.

- (5) Once approved, an LPGRR cannot be withdrawn.

### **2.3.3 COPS Review and Action**

- (1) Any ERCOT Member, Market Participant, Public Utility Commission of Texas (PUCT) Staff, the Reliability Monitor, the Independent Market Monitor (IMM), the North American Electric Reliability Corporation (NERC) Regional Entity, or ERCOT may comment on the LPGRR.
- (2) To receive consideration, comments must be delivered electronically to ERCOT in the designated format provided on the ERCOT website within 14 days from the posting date of the LPGRR. Comments submitted after the 14 day comment period may be considered at the discretion of COPS after these comments have been posted. Comments submitted in accordance with the instructions on the ERCOT website, regardless of date of submission, shall be posted on the ERCOT website and distributed to COPS within three Business Days of submittal.
- (3) COPS shall consider the LPGRR at its next regularly scheduled meeting after the end of the 14 day comment period. The quorum and voting requirements for COPS action are set forth in the Technical Advisory Committee Procedures. At such meeting, COPS shall take action on the LPGRR. In considering action on an LPGRR, COPS shall:
  - (a) Recommend approval of the LPGRR as submitted or as modified;
  - (b) Reject the LPGRR;
  - (c) Defer decision on the LPGRR; or
  - (d) Refer the LPGRR to another COPS working group or task force, or another TAC subcommittee with instructions.
- (4) If a motion is made to recommend approval of a LPGRR and that motion fails, the LPGRR shall be deemed rejected by COPS unless at the same meeting COPS later votes to recommend approval of, defer, or refer the LPGRR. The rejected LPGRR shall be subject to appeal pursuant to Section 2.4, Appeal of Action.
- (5) Within three Business Days after COPS takes action, ERCOT shall post a COPS Report reflecting the COPS action on the ERCOT website. The COPS Report shall contain the following items:
  - (a) Identification of submitter of the LPGRR;
  - (b) LPG language recommended by COPS, if applicable;
  - (c) Identification of authorship of comments;

- (d) Proposed effective date(s) of the LPGRR;
- (e) Recommended priority and rank for any LPGRRs requiring an ERCOT project for implementation; and
- (f) COPS action.

#### **2.3.4      *Comments to the COPS Report***

- (1) Any ERCOT Member, Market Participant, PUCT Staff, the Reliability Monitor, the IMM, the NERC Regional Entity, or ERCOT may comment on the COPS Report. Comments submitted in accordance with the instructions on the ERCOT website, regardless of date of submission, shall be posted on the ERCOT website and distributed to the committee (i.e. COPS and/or TAC) considering the LPGRR within three Business Days of submittal.
- (2) The comments on the COPS Report will be considered at the next regularly scheduled COPS or TAC meeting where the LPGRR is being considered.

#### **2.3.5      *Load Profiling Guide Revision Request Impact Analysis***

- (1) If COPS recommends approval of an LPGRR, ERCOT shall prepare an Impact Analysis based on the proposed language in the COPS Report. If ERCOT has already prepared an Impact Analysis, ERCOT shall update the existing Impact Analysis, if necessary, to accommodate the language recommended for approval in the COPS Report.
- (2) The Impact Analysis shall assess the impact of the LPGRR on ERCOT computer systems, operations, or business functions and shall contain the following information:
  - (a) An estimate of any cost and budgetary impacts to ERCOT for both implementation and ongoing operations;
  - (b) The estimated amount of time required to implement the LPGRR;
  - (c) The identification of alternatives to the LPGRR that may result in more efficient implementation; and
  - (d) The identification of any manual workarounds that may be used as an interim solution and estimated costs of the workaround.
- (3) Unless a longer review period is warranted due to the complexity of the proposed COPS Report, ERCOT shall post an Impact Analysis on the ERCOT website, for an LPGRR for which COPS has recommended approval of prior to the next regularly scheduled COPS meeting, and distribute to COPS. If a longer review

period is required by ERCOT to complete an Impact Analysis, ERCOT shall submit comments with a schedule for completion of the Impact Analysis.

### **2.3.6      *COPS Review of Impact Analysis***

- (1) After ERCOT posts the results of the Impact Analysis, COPS shall review the Impact Analysis at its next regularly scheduled meeting. COPS may revise its COPS Report after considering the information included in the Impact Analysis or additional comments received on the COPS Report.
- (2) Within three Business Days of COPS consideration of the Impact Analysis and COPS Report, ERCOT shall post the COPS Report on the ERCOT website. If COPS revises the COPS Report, ERCOT shall update the Impact Analysis, if necessary, post the updated Impact Analysis on the ERCOT website, and distribute it to the committee (i.e. COPS and/or TAC) considering the Impact Analysis. If a longer review period is required for ERCOT to update the Impact Analysis, ERCOT shall submit comments with a schedule for completion of the Impact Analysis.
- (3) If the LPGRR requires an ERCOT project for implementation, at the same meeting COPS shall assign a recommended priority and rank for the associated project.

### **2.3.7      *ERCOT Impact Analysis Based on COPS Report***

- (1) ERCOT shall review the COPS Report and, if necessary, update the Impact Analysis as soon as practicable. ERCOT shall distribute the updated Impact Analysis, if applicable, to TAC and post it on the ERCOT website. If a longer review period is required for ERCOT to update the Impact Analysis, ERCOT shall submit comments with a schedule for completion of the Impact Analysis.

### **2.3.8      *Protocol Revision Subcommittee Review of Project Prioritization***

- (1) At the next regularly scheduled Protocol Revision Subcommittee (PRS) meeting after COPS recommends approval of an LPGRR that requires an ERCOT project for implementation, PRS shall assign a recommended priority and rank for the associated project.

### **2.3.9      *Technical Advisory Committee Vote***

- (1) TAC shall consider any LPGRR that COPS has submitted to TAC for consideration for which both a COPS Report and an Impact Analysis (as updated if modified by COPS under Section 2.3.7, ERCOT Impact Analysis Based on



COPS Report) have been posted on the ERCOT website. The following information must be included for each LPGRR considered by TAC:

- (a) The COPS Report and Impact Analysis;
  - (b) The recommended priority and rank, if an ERCOT project is required; and
  - (c) Any comments timely received in response to the COPS Report.
- (2) The quorum and voting requirements for TAC action are set forth in the Technical Advisory Committee Procedures. In considering action on a COPS Report, TAC shall:
- (a) Approve the LPGRR as recommended in the COPS Report or as modified by TAC, if the LPGRR does not require ERCOT Board approval pursuant to Section 2.3.10, ERCOT Board Vote;
  - (b) Recommend approval of the LPGRR as recommended in the COPS Report or as modified by TAC, including modification of the recommended priority and rank if the LPGRR requires an ERCOT project for implementation;
  - (c) Reject the LPGRR;
  - (d) Defer decision on the LPGRR;
  - (e) Remand the LPGRR to COPS with instructions; or
  - (f) Refer the LPGRR to another TAC subcommittee or a TAC working group or task force with instructions.
- (3) If a motion is made to approve or recommend approval of an LPGRR and that motion fails, the LPGRR shall be deemed rejected by TAC unless at the same meeting TAC later votes to approve, recommend approval of, defer, remand or refer the LPGRR. If a motion to approve or recommend approval of an LPGRR fails via e-mail vote according to the Technical Advisory Committee Procedures, the LPGRR shall be deemed rejected by TAC unless at the next regularly scheduled TAC meeting or in a subsequent e-mail vote prior to the such meeting, TAC votes to approve, recommend approval of, defer, remand, or refer the LPGRR. The rejected LPGRR shall be subject to appeal pursuant to Section 2.4, Appeal of Action.
- (4) Within three Business Days after TAC takes action on an LPGRR, ERCOT shall post a TAC Report reflecting the TAC action on the ERCOT website. The TAC Report shall contain the following items:
- (a) Identification of the submitter of the LPGRR;

- (b) Modified LPG language proposed by TAC, if applicable;
  - (c) Identification of the authorship of comments, if applicable;
  - (d) Proposed effective date(s) of the LPGRR;
  - (e) Priority and rank for any LPGRR requiring an ERCOT project for implementation;
  - (f) COPS action;
  - (g) TAC action; and
  - (h) ERCOT's position for any LPGRR requiring ERCOT Board approval pursuant to Section 2.3.10.
- (5) If TAC recommends approval of an LPGRR requiring ERCOT Board approval pursuant to Section 2.3.10, ERCOT shall forward the TAC Report to the ERCOT Board for consideration pursuant to Section 2.3.10.
- (6) The TAC chair shall report the results of all votes by TAC related to LPGRRs to the ERCOT Board at its next regularly scheduled meeting.

#### **2.3.10     *ERCOT Board Vote***

- (1) The following LPGRRs require ERCOT Board approval:
- (a) Any LPGRR requiring an ERCOT project for implementation; and
  - (b) Any LPGRR that is related to a Nodal Protocol Revision Request (NPRR), a Planning Guide Revision Request (PGRR), or a revision request requiring an ERCOT project for implementation, excluding Administrative LPGRRs pursuant to paragraph (5) of Section 2.1, Introduction.
- (2) For any LPGRR requiring ERCOT Board approval, upon issuance of a TAC Report and Impact Analysis to the ERCOT Board, the ERCOT Board shall review the TAC Report and the Impact Analysis at the next regularly scheduled meeting. For Urgent LPGRRs, the ERCOT Board shall review the TAC Report and Impact Analysis at the next regularly scheduled meeting, unless a special meeting is required due to the urgency of the LPGRR.
- (3) The quorum and voting requirements for ERCOT Board action are set forth in the ERCOT Bylaws. In considering action on a TAC Report, the ERCOT Board shall:
- (a) Approve the LPGRR as recommended in the TAC Report or as modified by the ERCOT Board;

- (b) Reject the LPGRR;
  - (c) Defer decision on the LPGRR; or
  - (d) Remand the LPGRR to TAC with instructions.
- (4) If a motion is made to approve an LPGRR and that motion fails, the LPGRR shall be deemed rejected by the ERCOT Board unless at the same meeting the ERCOT Board later votes to approve, defer or remand the LPGRR. The rejected LPGRR shall be subject to appeal pursuant to Section 2.4, Appeal of Action.
- (5) Within three Business Days after the ERCOT Board takes action on an LPGRR, ERCOT shall post a Board Report reflecting the ERCOT Board action on the ERCOT website.

## **2.4 Appeal of Action**

- (1) Any ERCOT Member, Market Participant, Public Utility Commission of Texas (PUCT) Staff, the Reliability Monitor, the Independent Market Monitor (IMM), the North American Electric Reliability Corporation (NERC) Regional Entity, or ERCOT may appeal a Commercial Operations Subcommittee (COPS) action to reject, defer, or refer a Load Profiling Revision Request (LPGRR) directly to the Technical Advisory Committee (TAC). Such appeal to TAC must be submitted electronically to ERCOT by completing the designated form provided on the ERCOT website within seven days after the date of the relevant COPS appealable event. ERCOT shall reject appeals made after that time. ERCOT shall post appeals on the ERCOT website within three Business Days of receiving the appeal. Appeals shall be heard at the next regularly scheduled TAC meeting that is at least seven days after the date of the requested appeal. An appeal of an LPGRR to TAC suspends consideration of the LPGRR until the appeal has been decided by TAC.
- (2) Any ERCOT Member, Market Participant, PUCT Staff, the Reliability Monitor, the IMM, the NERC Regional Entity, or ERCOT may appeal a TAC action to approve, reject, defer, remand or refer an LPGRR directly to the ERCOT Board. Appeals to the ERCOT Board shall be processed in accordance with the ERCOT Board Policies and Procedures. An appeal of an LPGRR to the ERCOT Board suspends consideration of the LPGRR until the appeal has been decided by the ERCOT Board.
- (3) Any ERCOT Member, Market Participant, the Reliability Monitor, the IMM, the NERC Regional Entity, or PUCT Staff, may appeal any decision of the ERCOT Board regarding the LPGRR to the PUCT or other Governmental Authority. Such appeal to the PUCT or other Governmental Authority must be made within any deadline prescribed by the PUCT or other Governmental Authority, but in any event no later than 35 days of the date of the relevant ERCOT Board appealable event. Notice of any appeal to the PUCT or other Governmental

Authority must be provided, at the time of the appeal to ERCOT's General Counsel. If the PUCT or other Governmental Authority rules on the LPGRR, ERCOT shall post the ruling on the ERCOT website.

## **2.5 Urgent Requests**

- (1) The party submitting a Load Profiling Guide Revision Request (LPGRR) may request that the LPGRR be considered on an urgent timeline ("Urgent") only when the submitter can reasonably show that an existing Load Profiling Guide (LPG) provision is impairing or could imminently impair ERCOT System reliability or wholesale or retail market operations, or is causing or could imminently cause a discrepancy between a Settlement formula and a provision of the ERCOT Protocols.
- (2) The Commercial Operations Subcommittee (COPS) may designate the LPGRR for Urgent consideration if a submitter requests Urgent status or upon valid motion in a regularly scheduled meeting of COPS. Criteria for designating an LPGRR as Urgent are that the LPGRR requires immediate attention due to:
  - (a) Serious concerns about ERCOT System reliability or market operations under the unmodified language; or
  - (b) The crucial nature of Settlement activity conducted pursuant to any Settlement formula.
- (3) ERCOT shall prepare an Impact Analysis for Urgent LPGRRs as soon as practicable.
- (4) COPS shall consider the Urgent LPGRR and Impact Analysis if available at the next regularly scheduled COPS meeting, or at a special meeting called by the COPS leadership to consider the Urgent LPGRR.
- (5) If the submitter desires to further expedite processing of the LPGRR, a request for voting via e-mail may be submitted to the COPS chair. The COPS chair may grant the request for voting via e-mail. Such voting shall be conducted pursuant to the Technical Advisory Committee Procedures.
- (6) If recommended for approval by COPS, ERCOT shall post a COPS Report on the ERCOT website within three Business Days after COPS takes action. The Technical Advisory Committee (TAC) chair may request action from TAC to accelerate or alter the procedures described herein, as needed, to address the urgency of the situation.
- (7) Any Urgent LPGRRs shall be subject to an Impact Analysis pursuant to Section 2.3.7, ERCOT Impact Analysis Based on COPS Report, and TAC consideration pursuant to Section 2.3.9, Technical Advisory Committee Vote.

## **2.6 Load Profiling Guide Revision Implementation**

- (1) For Load Profiling Guide Revision Requests (LPGRRs) that do not require ERCOT Board approval pursuant to Section 2.3.10, ERCOT Board Vote, upon Technical Advisory Committee (TAC) approval, ERCOT shall implement LPGRRs on the first day of the month following TAC approval, unless otherwise provided in the TAC Report for the approved LPGRR.
- (2) For LPGRRs that require ERCOT Board approval pursuant to Section 2.3.10, upon ERCOT Board approval ERCOT shall implement LPGRRs on the first day of the month following the ERCOT Board approval, unless otherwise provided in the Board Report for the approved LPGRR.
- (3) For LPGRRs for which an effective date other than the first day of the month following, TAC or ERCOT Board approval, as applicable, is provided, the ERCOT Impact Analysis shall provide an estimated amount of time required to implement the LPGRR and ERCOT shall provide notice as soon as practicable, but no later than ten days prior to actual implementation, unless a different notice period is required in the TAC or Board Report, as applicable, for the approved LPGRR.
- (4) ERCOT shall implement an Administrative LPGRR on the first day of the month following the end of the ten Business Day posting requirement outlined in Section 2.1, Introduction.

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### **3 [ RESERVED]**



# **ERCOT Load Profiling Guide**

## **Section 4: The Profiling Working Group**

**November 1, 2016**

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## **4 THE PROFILING WORKING GROUP**

- (1) The Profiling Working Group (PWG) is a standing working group that provides technical support to the Commercial Operations Subcommittee (COPS) on Load Profiling issues. The PWG establishes high-level principles to be utilized in the development of Load Profiles. These principles are specified in Protocol Section 18.2.1, Guidelines for Development of Load Profiles. The PWG membership is open to all Market Participants and any other interested parties.

### **4.1 Purpose of the Profiling Working Group**

- (1) The Profiling Working Group (PWG) is a forum in which Market Participants may participate to facilitate changes in the market rules pertaining to Load Profiling issues as reflected in the Protocols and the Load Profiling Guide (LPG). The PWG shall be involved in all policy issues and some operational aspects of Load Profiling in the ERCOT market.

### **4.2 Profiling Working Group Responsibilities**

- (1) The PWG has several responsibilities and duties, which include the following:
  - (a) Maintains and upholds Protocol Section 18, Load Profiling;
  - (b) Reviews all requests for changes to Load Profiles, Load Profiling Methodologies, and implementation of the Load Profiling process;
  - (c) Reviews and makes recommendations to the Commercial Operations Subcommittee (COPS) regarding the Load Profiling Guide (LPG) changes, including Appendix D, Profile Decision Tree, and Load Profiling Methodologies;
  - (d) Participates in defining Weather Zones and Load Profile Types;
  - (e) Evaluates the validation and assignment processes for Load Profile IDs;
  - (f) Coordinates with ERCOT in developing Load Profiles for particular Customer segments that may require special Load Profiling techniques (e.g., supplemental Load Profiles);
  - (g) Develops and maintains the LPG; and
  - (h) Provides a forum for Market Participants to be involved with ERCOT Load Profiling.

### **4.3 Profiling Working Group Reporting Structure**

- (1) The Profiling Working Group (PWG) reports to the Commercial Operations Subcommittee (COPS), which is a standing subcommittee of Technical Advisory Committee (TAC). The PWG leadership is elected annually by the PWG on a calendar year basis. PWG leadership establishes the PWG meeting dates and represents the PWG at COPS and other ERCOT forums, as necessary. The PWG shall meet as needed to review Load Profiling processes and issues.

### **4.4 Profiling Working Group Contact Information**

- (1) To begin or discontinue receiving electronic mail related to the Profiling Working Group (PWG), subscribe or unsubscribe through the ERCOT ListServ.

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# **ERCOT Load Profiling Guide**

## **Section 6: Load Profiling Methodology**

**November 1, 2016**

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## 6 LOAD PROFILING METHODOLOGY

- (1) Any changes to the Load Profiling Methodology shall be submitted as a Load Profiling Guide Revision Request (LPGRR) as described in Section 2.4, Load Profiling Guide Revision Procedure. There shall be no retroactive application of any approved modifications to Load Profiling Methodology.

### 6.1 Current Methodologies

- (1) The following methodologies are used to establish Load Profiles:

<b>Type of Load</b>	<b>Load Profiling Methodology</b>
<b><i>Non-Price-Responsive</i></b>	
Non-interval metered	Adjusted Static Models
Non-interval metered with Distributed Generation (DG)	Adjusted Static Models and Engineering Estimates
Non-metered	Engineering Estimates
Interval Data Recorder (IDR) (Estimation)	Proxy day
<b><i>Price-Responsive</i></b>	
Other price-responsive	To be determined

# **ERCOT Load Profiling Guide**

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# **ERCOT Load Profiling Guide**

## **Section 8: Load Profile Models**

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## **8 LOAD PROFILE MODELS**

- (1) Protocol Section 18.2.8, Adjustments and Changes to Load Profile Development, defines evaluation of Load Profiling Methodology including changes to the Load Profiling Methodology, adjustments to existing Load Profiles, and development of new Load Profiles. This Section addresses changes to models within approved Load Profiling Methodologies.
- (2) The Microsoft Excel© representation of the ERCOT Load Profile Models can be found in Appendix E, Load Profile Model Spreadsheets.
- (3) There shall be no retroactive application of any approved modifications to Load Profile Models.
- (4) This Section discusses changes to Load Profile Models not addressed in the following the Load Profiling Guide (LPG) sections:
  - (a) Section 6, Load Profiling Methodology;
  - (b) Section 12, Request for Load Profile Segment Changes, Additions, or Removals; and
  - (c) Section 13, Changes to Weather Zone Characteristics.

### **8.1 Load Profile Model Evaluations**

- (1) Upon request from the appropriate Technical Advisory Committee (TAC) subcommittee, ERCOT shall perform evaluations of Load Profile Model performance for all Load Profile Models and Load Profile Types using industry standard practices as described in the Association of Edison Illuminating Companies (AEIC) Load Research Manual. Any changes resulting from these evaluations shall be recommended to the Profiling Working Group (PWG).

#### **8.1.2 *Evaluation of Weather Zones***

- (1) Assessment of Weather Zone definition shall focus on the adequacy of the current set of weather stations and weighting. ERCOT uses National Oceanic and Atmospheric Administration (NOAA) first or second order weather stations as the source for weather data for each Weather Zone. Weather Zone evaluation will be conducted using industry standard practices as described in the AEIC Load Research Manual.



## **8.2 Evaluating Load Profile Models Using Load Research Data**

### **8.2.1 *Sources of Load Research Data***

- (1) Load research data may be collected by ERCOT using Advanced Metering System (AMS) interval data and from any available Transmission and/or Distribution Service Provider's (TDSP's) Load research samples.
- (2) In certain circumstances, Load research data from other sources may also be considered by ERCOT as representative of a particular subgroup. For such data to be used, the party submitting the data for use in an evaluation shall provide information on the source of the data. Submission requirements are the same as those described in Section 12.5, Information Required with Request for Change.

### **8.2.2 *Procedures***

- (1) The overall procedure for comparing existing Load Profile Models against current Load research data shall use industry standard practices as described in the Association of Edison Illuminating Companies (AEIC) Load Research Manual.

## **8.3 Evaluating Load Profile Models without Current Load Research Data**

### **8.3.1 *Applications***

- (1) In some situations, current Load research data may not be available as a basis for assessing the performance of Load Profile Models. Situations where techniques are required that do not depend on Load research data include:
  - (a) Assessing Load Profile Model performance for geographic areas where Load research data are no longer collected;
  - (b) Assessing Load Profile Model performance for geographic areas where Load research data have never been collected, or have not contributed to current Load Profile Models; and
  - (c) Assessing Engineering Estimates.
- (2) These techniques may also be used as another way of assessing Load Profile Model performance even for geographic areas where current Load research data are available.

### **8.3.2      *Load Profile Model Comparisons***

#### **8.3.2.1      Comparisons for Adjusted Static Models**

- (1) For premises with an Advanced Meter installed, Adjusted Static Models may be assessed based on techniques described in the Association of Edison Illuminating Companies (AEIC) Load Research Manual.

#### **8.3.2.3      Comparisons for Engineering Estimates**

- (1) Engineering Estimates are used in the ERCOT market for Non-Metered Loads, such as lighting. Engineering Estimates are typically based on an assumed fixed operating schedule together with the assumption that the Load is approximately the same whenever the equipment is operating. If more current information is available for the Electric Service Identifiers (ESI IDs) in a Load Profile Segment using an engineering Load Profile, this information may be compared with the assumptions of the Engineering Estimate.
- (2) Monthly consumption data may also be compared with the Load Profile monthly patterns using the methods described above for Adjusted Static Models.

### **8.4      Requesting Load Profile Model Evaluations or Changes**

- (1) This Section describes the procedures for requesting changes to Load Profile Models. Procedures for requesting changes to Load Profile Segments are described in Section 12, Request for Load Profile Segment Changes, Additions, or Removals. Procedures for requesting changes to Weather Zones are described in Section 13, Changes to Weather Zone Characteristics. Upon request from the appropriate Technical Advisory Committee (TAC) subcommittee, ERCOT will evaluate Load Profile Models using industry standard practices as described in the Association of Edison Illuminating Companies (AEIC) Load Research Manual.
- (2) The following Entities may submit requests for Load Profile Model changes:
  - (a) Any Market Participant;
  - (b) Any Entity that is an ERCOT Member;
  - (c) Public Utility Commission of Texas (PUCT) Staff;
  - (d) ERCOT Staff; and
  - (e) Any other Entity who resides (or represent residents) in Texas or operates in the Texas electricity market.

- (3) Requests for Load Profile Model changes shall be submitted to the Profiling Working Group (PWG) and are subject to approval as outlined in Section 8.5, Approval Process for Load Profile Model Changes.
- (4) Requests for Load Profile Model changes shall include the following:
  - (a) Identifying the party making the request, with contact information;
  - (b) Identifying the Load Profile Segment(s) and Weather Zone(s) affected;  
and
  - (c) Describe why the evaluation is needed.

### **8.5 Approval Process for Load Profile Model Changes**

- (1) For any proposed Load Profile Model changes, the Profiling Working Group (PWG) shall propose changes to the appropriate Technical Advisory Committee (TAC) subcommittee.
- (2) Load Profile Model changes shall be accompanied by an implementation plan to mitigate the impact of transitioning between old and new Load Profile Models. The implementation plan shall be approved by TAC and the appropriate TAC subcommittee.

# **ERCOT Load Profiling Guide**

## **Section 9: Load Profile IDs**

**November 1, 2016**

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## **9 LOAD PROFILE IDS**

### **9.1 Assignment of Load Profile IDs**

- (1) Transmission and/or Distribution Service Providers (TDSPs) are responsible for initially assigning the Load Profile IDs of all Electric Service Identifiers (ESI IDs), as well as any changes in assignment. ERCOT is responsible for calculating the Load Profile Segment for the Load Profile ID as defined by the Annual Validation process in Section 11.2, Annual Validation of Load Profile Type. The Profile Decision Tree is a dynamic Microsoft Office Excel© file (see Appendix D, Profile Decision Tree) that contains the directions to use when assigning Load Profile IDs to ESI IDs.

#### ***9.1.1 Profile Decision Tree Revision and Approval Process***

- (1) All revisions to Appendix D, Profile Decision Tree, shall be submitted through the Load Profiling Guide Revision Request (LPGRR) process described in Section 2, Load Profiling Guide Revision Process. ERCOT may use an administrative LPGRR to revise the contents of the following Profile Decision Tree tabs:
  - (a) FAQ – frequently asked questions related to the assignment of Load Profile IDs;
  - (b) Use of Components – information about how each component of the Load Profile ID is used by ERCOT in the Settlement process;
  - (c) ZipToZone – a table that maps Zone Improvement Plan (ZIP) Codes to Weather Zones;
  - (d) Valid Profile IDs – a list of all Load Profile IDs that can be assigned to ESI IDs that are within the ERCOT Region;
  - (e) Non-ERCOT Profile IDs – a list of Load Profile IDs that can be assigned to ESI IDs that are within Texas, but outside of the ERCOT Region; and
  - (f) NOIEs – directions for Non-Opt-In Entities (NOIEs) to use in determining Load Profile ID assignments.

#### ***9.1.2 Assignment of Load Profile IDs for New Service Delivery Points***

- (1) TDSPs shall create and submit ESI IDs as new Service Delivery Points (SDPs) are established. It is the responsibility of the TDSP to make the Load Profile ID assignment for each new ESI ID. To assign the Load Profile Type for new ESI

IDs, the TDSP shall assign the default Load Profile Segment designated in Appendix D, Profile Decision Tree, on the “Segment Assignment” worksheet.

**9.1.3      *Assignment of Load Profile IDs for New Electric Service Identifiers Resulting from a Mass Transition***

- (1) When a Mass Transition involves moving SDPs from one TDSP to another, the gaining TDSP creates and submits ESI IDs for all gained SDPs. To assign the Load Profile ID for new ESI IDs, the gaining TDSP shall obtain the current Load Profile ID assignment from either the losing TDSP or ERCOT. For detailed information on the mass customer transition process, please refer to Retail Market Guide.

**9.1.4      *Assignment of BUSOGFLT Profile Type***

- (1) Competitive Retailers (CRs) seeking to have the Oil & Gas Flat (OGFLT) Load Profile Segment assigned to one of their Business (BUS) ESI IDs shall follow the instructions on the Oil & Gas tab of Appendix D, Profile Decision Tree.
- (2) ERCOT shall review all assignments of the BUSOGFLT Profile Type on an annual basis, per Section 11.3.1, Validation of BUSOGFLT Profile Type.

**9.1.5      *Assignment of Load Profile IDs for Distributed Generation***

- (1) CRs seeking to have the profile segments for Photovoltaic, wind or other Distributed Generation (DG) assigned to one of their Residential (RES) or Business (BUS) ESI IDs shall follow the instructions on the “DG” tab of Appendix D, Profile Decision Tree.
- (2) ERCOT shall review all assignments of the Load Profile Segments for Photovoltaic, wind, and other DG on an annual basis, per Section 11.3.3, Validation of Profile Segments for Distributed Generation.

**9.1.6      *kVA Metered Loads***

- (1) Any TDSP that routinely measures kVA Demand instead of kW Demand shall coordinate with the PWG to determine the Power Factor that shall be used to estimate their kW Demand, in accordance with Section 10, kVA to kW Conversion. Approved Power Factors are listed in Appendix D, Profile Decision Tree.

**9.1.7 Load Profile ID Assignment for Non-ERCOT Electric Service Identifiers**

- (1) TDSPs are required to assign ESI IDs for all SDPs within Texas, not just those within the ERCOT Region. Therefore, a Load Profile ID shall also be submitted to ERCOT by the respective TDSP, even though the non-ERCOT information shall not be used in ERCOT Settlements. To ensure that the non-ERCOT Load Profile IDs are not confused with the ERCOT Load Profile IDs, it is necessary to give them names that are different than those for ESI IDs within ERCOT.
- (2) A list of valid Load Profile IDs to be assigned to ESI IDs within Texas, but outside of the ERCOT Region (non-ERCOT ESI IDs), is included in Appendix D, Profile Decision Tree, under the “Non-ERCOT Profile IDs” worksheet. TDSPs shall submit for approval to ERCOT additional names or changes for their non-ERCOT Load Profile IDs. The Load Profile ID may be no more than 30 characters in length. A comprehensive listing of non-ERCOT Load Profile IDs shall be maintained in the Profile Decision Tree.

**9.1.8 Load Profile ID Assignment for Non-Opt In Entities**

- (1) NOIEs are required to submit Load Profile IDs for the ESI IDs that represent the NOIE metering points, as defined in Protocol Section 10, Metering. The Profile Decision Tree contains details on Load Profile ID assignments for NOIEs. The Load Profile ID shall be based on default values for four of the five fields in the Load Profile ID. The only component determined by the NOIE is the Weather Zone code. This is assigned based on the ZIP code at the metering point.

**9.2 Processes to Change Load Profile ID Assignments**

- (1) ERCOT, a Transmission and/or Distribution Service Provider (TDSP), or a Competitive Retailer (CR) may request a change in the Load Profile ID assignment of an Electric Service Identifier (ESI ID). ERCOT may initiate a change as a result of the ERCOT Load Profile ID validation process. A TDSP shall initiate a change, when necessary, due to a change in the TDSP tariff to which the ESI ID is assigned, a meter type change, or an error with the Load Profile ID assignment. A CR may submit a change request to the TDSP when the CR believes there is an error in the existing Load Profile ID or when the CR believes adequate data has become available to replace a default Load Profile ID assigned to a new ESI ID. A Customer may request a Load Profile ID change by contacting their CR. Load Profile ID assignments shall always be based on the criteria defined in the appropriate Profile Decision Tree. Regardless of which Entity initiates a change in the Load Profile ID assignment for an ESI ID, the TDSP is responsible for formally updating ERCOT’s systems using the appropriate Texas Standard Electronic Transaction (TX SET).
- (2) All communication among Market Participants and between Market Participants and ERCOT regarding Load Profile ID changes shall be implemented per the



appropriate TX SET transaction, except for alternative communication processes that are specified within the Load Profiling Guide (LPG).

- (3) For any change made to a Load Profile ID, it is the responsibility of the TDSP to make sure the effective date of change is concurrent with a specific meter read date and that the meter read information reaches ERCOT prior to the Load Profile ID change. For Load Profile ID changes that result from Annual Validation, a TDSP tariff change, a meter type change, or a CR request to change a default Load Profile ID when adequate data becomes available, the TDSP shall submit the change after said meter read has been sent to ERCOT. For any Load Profile ID assignments that are found to be in error by dispute, the effective date of change shall be retroactive to the meter read date when no profile segment assignment error existed; however, the effective date of the change shall not go any farther back than what would affect the True-Up Settlement.

### ***9.2.1 Load Profile ID Changes Initiated By Transmission and/or Distribution Service Providers***

#### **9.2.1.1 Load Profile ID Change Related to a Transmission and/or Distribution Service Provider Tariff Change**

- (1) When a Premise changes between residential and business TDSP tariffs, or when a meter type change is made for a TDSP tariff billing requirement, the TDSP is required to submit a Load Profile ID change effective on the meter read date of the TDSP tariff change.

#### **9.2.1.2 Recognized Error in Current Assignment**

- (1) Should the TDSP become aware of an error in the assignment of a Load Profile ID, the TDSP shall notify the CR of the error as soon as practical via the appropriate Texas SET transaction. If a dispute is created, refer to Section 14.2, General Load Profile ID Dispute Resolution Guidelines.

#### **9.2.1.3 Load Profile ID Changes Resulting from Meter Type Changes**

- (1) The following subsections outline the procedures for implementing Load Profile ID changes when a meter type change occurs. The TDSP shall submit the Load Profile ID change to ERCOT using the appropriate TX SET transaction with the effective date of the meter change once the meter installation is complete.

**9.2.1.3.1 Business Demand to Business Non-Demand**

- (1) When Demand data is no longer required by the TDSP tariffs, and the CR has no need for Demand data then the TDSP shall change the assignment of the ESI ID to BUSNODEM. If a Demand meter is present and used for billing purposes, then the TDSP shall send Demand data to ERCOT via TX SET transactions.
- (2) When a TDSP determines that an ESI ID assignment should be changed to BUSNODEM based on the TDSP metering tariff rules, the TDSP shall notify the CR at least 30 days prior to making the Load Profile ID change. If the CR requires Demand data to support Customer billing for the ESI ID in question, then the CR shall notify the TDSP of its requirement for Demand data. Upon CR notification, the TDSP shall not change the Demand meter and the TDSP shall continue collecting Demand data. The ESI ID shall retain its Load factor Load Profile ID assignment.
- (3) If it is determined that Demand data is no longer required by either the CR or the TDSP, the TDSP has the option of:
  - (a) Replacing the Demand meter with a non-Demand meter; or
  - (b) Leaving the Demand meter in place but discontinue sending any Demand data for that ESI ID to ERCOT.
- (4) Regardless of which Demand meter change option the TDSP pursues, the effective date of the Load Profile ID change shall coincide with the last meter read date where Demand data is sent to ERCOT.
- (5) If a TDSP elects to leave a Demand meter in service on an ESI ID that no longer requires a Demand meter, the Load Profile ID shall be changed to the BUSNODEM profile. The TDSP shall submit the appropriate TX SET transaction to change the Load Profile ID to ERCOT before the next regularly scheduled meter read date with an effective date of the last meter read.
- (6) If the TDSP elects to replace the meter, then the TDSP shall submit the appropriate TX SET transaction to ERCOT to change the Load Profile ID with an effective date of the meter change date.

**9.2.1.3.2 Non-Demand to Demand**

- (1) The CR shall notify the TDSP when it requires a specific ESI ID to have a Demand meter. Under normal Demand meter installations, the TDSP has until the second regularly scheduled meter read date after receipt of the CR's request to install the requested meter type at the Premise and submit the Load Profile ID change to ERCOT.

**9.2.1.4 CR Requested Change from a Default Load Profile ID**

- (1) After a new ESI ID has sufficient usage history, a CR may request a change from a default Load Profile ID using the ERCOT retail transaction issue resolution system. The requested Load Profile ID shall follow the guidelines for calculations contained in Appendix D, Profile Decision Tree. In the case of a Business ESI ID, the 12 months used in the calculations shall be the first 12 months of usage for the ESI ID. In the case of a residential ESI ID, the first consecutive seven months from October through April is all that is needed for the calculation of Winter Ratio. Once the Winter Ratio is known then the CR may request a change from the default Load Profile ID. After ERCOT has validated the CR's calculated Load Profile ID change request, ERCOT will then submit the request to the appropriate TDSP. The TDSP will verify that the change is consistent with their tariff and send the appropriate TX SET transaction to complete the request.

# **ERCOT Load Profiling Guide**

## **Section 10: kVA to kW Conversion**

**November 1, 2016**

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**10 KVA TO KW CONVERSION.....10-1**

## **10 kVA TO kW CONVERSION**

- (1) The majority of Transmission and/or Distribution Service Providers (TDSPs) meter kW Demand. However, some TDSPs only meter kVA Demand. To assign a Load Profile ID to an Electric Service Identifier (ESI ID), the kVA shall be converted to a kW value for the Load factor calculation when necessary. This Section 10, kVA to kW Conversion, addresses how kVA shall be converted to kW for Load Profile ID assignments.
- (2) This section applies to any Market Participants such as:
  - (a) A TDSP that currently meters kVA;
  - (b) A TDSP that changes from kW to kVA metering; or
  - (c) A Non-Opt-In Entity (NOIE) that currently meters kVA and decides to opt-in.
- (3) Appendix D, Profile Decision Tree, defines how kVA is to be converted to kW (kW is equivalent to the product of kVA and Power Factor). The Power Factor(s) for this conversion shall be determined by a case study performed by the TDSP. Without a case study, a default Power Factor of 1.0 shall be imposed. A default Power Factor of 1.0 means kVA shall be considered equivalent to kW.

# **ERCOT Load Profiling Guide**

## **Section 11: Validation of Load Profile ID**

**April 1, 2017**

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## **11 VALIDATION OF LOAD PROFILE ID**

- (1) A Load Profile ID is comprised of five components:
  - (a) Load Profile Type;
  - (b) Weather Zone;
  - (c) Meter Data Type;
  - (d) Weather sensitivity; and
  - (e) Time Of Use Schedule (TOUS).
- (2) ERCOT shall validate the first two components, the Load Profile Type and Weather Zone, at the following times:
  - (a) As part of the initial assignment of Load Profile IDs for Opt-In Entities;
  - (b) When Load Profile Segment definitions change; and
  - (c) At least one time per year during the Annual Validation process.
- (3) At the start of the validation process, the Transmission and/or Distribution Service Provider (TDSP) shall be asked by ERCOT to confirm contact information for the primary and backup TDSP contact persons. ERCOT shall provide the TDSP contact information on an ERCOT contact person.
- (4) Electronic mail is the primary means of communication among ERCOT, the Profiling Working Group (PWG), and Market Participants regarding the validation process detailed in this section. Other methods of communication shall be accommodated if all affected parties mutually agree to alternative methods.

### **11.1 Initial Assignment of Load Profile IDs for Opt-In Entities**

- (1) When a Non-Opt-In Entity (NOIE) chooses to participate in the retail market, it thereby becomes an Opt-In Entity and the initial assignment of Load Profile IDs to Electric Service Identifiers (ESI IDs) shall be subject to all requirements detailed in this Section 11.1, Initial Assignment of Load Profile IDs for Opt-In Entities.
- (2) Once the Opt-In Entity has given notice to ERCOT of its intent to participate in the retail market, the Opt-In Entity shall submit all assigned ESI IDs, their Load Profile Group, and their historical usage to ERCOT. Additionally, the Profile Type shall be submitted for all ESI IDs assigned to the non-metered group.
  - (a) The Opt-In Entity shall provide to ERCOT, in a comma-delimited format at least 120 days prior to the effective start date, the ESI ID's monthly

usage and Demand values for a period of time established in coordination with ERCOT.

- (b) Load Profile ID assignments shall be based on the criteria defined in Appendix D, Profile Decision Tree.
  - (i) ERCOT will calculate the Load Profile Segment using the historical usage provided by the Opt-In Entity.
  - (ii) ERCOT shall provide the Opt-In Entity a file containing all of the ESI IDs and their Load Profile Type.
  - (iii) The Opt-In Entity shall use the provided information to assign the Load Profile ID via the appropriate Texas Standard Electronic Transactions (TX SET) and shall coordinate with ERCOT to schedule submittal of the transaction(s).

#### ***11.1.1 Validation of Initial Opt-In Entity Assignments***

- (1) The Opt-In Entity shall notify ERCOT via email when the transactions to create the Opt-In ESI IDs have been submitted and accepted in the ERCOT System. After receiving notification, ERCOT shall perform three additional reviews to ensure all ESI IDs are set up in accordance with the appropriate Profile Decision Tree:
  - (a) ERCOT will compare each ESI ID and Load Profile ID assignment in the ERCOT database with the previously approved initial Load Profile Type;
  - (b) ERCOT will validate that Weather Zone assignment is consistent with the appropriate Profile Decision Tree; and
  - (c) ERCOT shall validate Load Profile Group assignment for Residential and Business ESI IDs by using the Premise Type field in ERCOT's registration database. The Residential Load Profile Group must match the Residential Premise Type in the registration database. The Business Load Profile Group must match either the Small Non-Residential or Large Non-Residential Premise Type in the registration database.
- (2) Any discrepancies will be reported to the Opt-In Entity via email. The Opt-In Entity shall submit corrections to ERCOT via appropriate TX SET transaction(s) or provide details as to why the data elements have changed.
- (3) The initial Load Profile ID assignment validation is complete after all discrepancies are resolved.

## **11.2 Annual Validation of Load Profile Type**

- (1) Transmission and/or Distribution Service Providers (TDSPs) and ERCOT shall work together to complete the Annual Validation process. When a date is listed in this Section 11.2, Annual Validation of Load Profile Type, and a year is not specified, the date shall apply to the current year in which the Annual Validation is performed.

### ***11.2.1 Annual Validation of Load Profile Type Assignment for RES and BUS Load Factor Electric Service Identifiers***

- (1) For the purposes of Annual Validation, ERCOT is responsible for determining the Load Profile Type assignment for all Residential and Business Load factor Electric Service Identifiers (ESI IDs).
- (2) The following timeline shall be adhered to, unless otherwise approved by an appropriate Technical Advisory Committee (TAC) subcommittee. ERCOT shall utilize the historical usage and Demand data in its systems to derive usage time period values for each active and de-energized ESI ID for the time period specified in Appendix D, Profile Decision Tree.
  - (a) Residential & Business Load Profile Group Timeline
    - (i) ERCOT shall determine the Load Profile Type for the Load Profile ID for each active and de-energized ESI ID based on the current Profile Decision Tree in Appendix D. ERCOT shall provide the TDSPs with a list of Residential & Business Load factor ESI IDs containing the current Load Profile Type and the recommended Load Profile Type for those ESI IDs where ERCOT recommends a change in Load Profile Type assignment. An electronic copy of each list shall be delivered to each TDSP no later than March 30.
    - (ii) For each ESI ID contained in the lists, the TDSPs shall review the recommended Load Profile Segment assignment and determine whether the recommended change is consistent with the TDSP tariffs, the applicable Retail Electric Provider (REP) billing requirements, and whether the ESI ID is active or de-energized. The TDSP shall then send finalized lists of ESI IDs back to ERCOT no later than April 10. The finalized lists shall indicate all revisions determined to be necessary by the TDSP.
    - (iii) ERCOT shall send notification to Competitive Retailers (CRs) and the Profiling Working Group (PWG) by April 15 announcing these lists are available to the CR of record. Upon request, ERCOT shall make available to the current CR of record the list of those ESI IDs that are expected to have a Load Profile ID change as a result of Annual Validation.

- (iv) The TDSPs shall coordinate with ERCOT to submit the necessary Texas Standard Electronic Transaction (TX SET) transactions to update Load Profile ID assignments to be effective on the most current meter read date on or after April 15.
- (v) TDSPs are responsible for verifying that TX SET transactions related to Annual Validation have been successfully accepted into ERCOT's systems by monitoring the appropriate response transactions. The TDSPs and ERCOT shall work together to have TX SET transactions successfully completed by September 30.
- (vi) Within the first two Business Days of the TDSP successfully submitting all of its necessary transactions, ERCOT shall compare the finalized lists of recommended changes with the current Load Profile ID in the ERCOT system. ERCOT and the TDSPs shall work closely and expeditiously to resolve any discrepancies. The TDSP and ERCOT shall be in contact until at least 99.0% of the finalized list of changes is resolved to their mutual satisfaction.
- (vii) ERCOT and the TDSPs shall provide regular updates on the progress of Annual Validation as needed, or at a minimum during the regularly scheduled PWG meetings.

### **11.3 Additional Validations**

- (1) During the Annual Validation process, ERCOT shall perform additional validations to identify potentially incorrect Load Profile ID or Premise Type assignments. If ERCOT and the Transmission and/or Distribution Service Provider (TDSP) confirm a Load Profile ID or Premise Type change is necessary, the TDSP shall update the Load Profile ID in the ERCOT system using the appropriate Texas Standard Electronic Transaction (TX SET) transaction.

#### ***11.3.1 Validation of BUSOGFLT Profile Type***

- (1) ERCOT shall verify that only eligible Electric Service Identifiers (ESI IDs) are assigned the Business Oil and Gas Flat (BUSOGFLT) Profile Type. Should an ESI ID be found to have been assigned the BUSOGFLT Profile Type erroneously, ERCOT shall work with the TDSP to have the Profile Type assignment corrected, and ERCOT shall notify the Competitive Retailer (CR) of record.

#### ***11.3.2 Validation of NMFLAT and NMLIGHT Profile Types***

- (1) ERCOT shall review all ESI IDs and their usage which are classified with either a Non-Metered Flat (NMFLAT) or Non-Metered Light (NMLIGHT) Profile Type and calculate the Average Daily Use (ADU) for each ESI ID. ESI IDs with

excessive fluctuation over the 12-month period being reviewed shall be reported to the TDSP.

### ***11.3.3 Validation of Profile Segments for Distributed Generation***

- (1) ERCOT shall verify that only eligible ESI IDs are assigned Load Profile Segments for Distributed Generation (DG). For ESI IDs found to have been assigned a profile segment for DG erroneously, ERCOT shall work with the TDSP to have the profile segment assignment corrected.

### ***11.3.4 Comparison of Profile Type to Premise Type***

- (1) ERCOT shall review and identify all ESI IDs with conflicting Profile and Premise Type combinations. Any discrepancies shall be reported to the TDSP.

### ***11.3.5 Validation of Service Address Zone Improvement Plan Code***

- (1) ERCOT shall validate that the service address Zone Improvement Plan (ZIP) code for each ESI ID is located within the ERCOT region, and shall perform consistency checks for Congestion Zone, TDSP service area, and substation. ERCOT shall provide lists to the TDSP of any ESI IDs which have been identified as having a suspect ZIP code or substation assignment.

### ***11.3.6 Validation of Weather Zone Code***

- (1) ERCOT shall compare the current ESI ID Weather Zone component of the Load Profile ID to the Weather Zone assignment based on the current Profile Decision Tree in Appendix D, Profile Decision Tree, utilizing the service address ZIP code in ERCOT's system. Any discrepancies shall be reported to the TDSP.

### ***11.3.7 Comparison of Meter Data Type Code to Profile Type Code***

- (1) ERCOT shall compare the Meter Data Type code component of the Profile ID to the Load Profile Group code for all ESI IDs. Any discrepancies shall be reported to the TDSP.

### ***11.3.8 Comparison of Weather Sensitivity Code to Meter Data Type Code***

- (1) ERCOT shall verify that all ESI IDs with a Meter Data Type of Non-Interval Data Recorder (NIDR) are assigned a Weather Sensitivity code of Non-Weather Sensitivity (NWS). ERCOT shall also verify that only ESI IDs having a Meter Data Type of IDR which were identified by ERCOT during the most recent weather sensitivity analysis as being weather sensitive are assigned a weather

sensitivity code of WS. Any discrepancies shall be reported to the TDSP. The annual procedures for reviewing of the weather sensitivity code are located in Protocol Section 11.4.3.1, Weather Responsiveness Determination.

# **ERCOT Load Profiling Guide**

## **Section 12: Request for Load Profile Segment Changes, Additions, or Removals**

**April 1, 2017**

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## **12 REQUEST FOR LOAD PROFILE SEGMENT CHANGES, ADDITIONS, OR REMOVALS**

- (1) This Section 12, Request for Load Profile Segment Changes, Additions, or Removals, of the Load Profiling Guide (LPG) addresses changes, additions, and deletions to Load Profile Segments, with the exception of Load Profile Segment modifications addressed in Section 16, Supplemental Load Profiling.
- (2) The steps and tests identified to introduce new Load Profiles or changes to Load Profiles are intended to fulfill the criteria established in Protocol Section 18.2.1, Guidelines for Development of Load Profiles.
- (3) Any change to Load Profile ID assignments resulting from an approved modification to the definitions of Load Profile Segments shall not be retroactively applied.

### **12.1 Types of Requests**

- (1) The types of requests are:
  - (a) Creation of a new Load Profile Segment from one or more existing Load Profile Segments;
  - (b) Redefinition of existing Load Profile Segments; and
  - (c) Removal of existing Load Profile Segments.

#### ***12.1.1 Creation of a New Load Profile Segment***

- (1) When a new Load Profile Segment is created, there may be an impact to the Electric Service Identifiers (ESI IDs) assigned to one or more existing Load Profile Segments. The new Load Profile Segment will be applied to ESI IDs that meet the criteria for the new Load Profile Segment while being removed from the existing Load Profile Segment.

#### ***12.1.2 Redefinition of an Existing Load Profile Segment***

- (1) Redefinition of existing Load Profile Segment definitions may require that some ESI IDs be moved from one Load Profile Segment to another.

#### ***12.1.3 Removal of Existing Load Profiles Segments***

- (1) A request to remove an existing Load Profile Segment shall include supporting documentation that the Load Profile Segment proposed for removal does not

satisfy the standards for a separate Load Profile. Specifically, the group represented by the Load Profile may be:

- (a) Too small to justify a separate Load Profile Segment, as described in Section 12.4, Groups of Electric Service Identifiers Eligible to Become Load Profile Segments; and/or
  - (b) Sufficiently similar to one or more existing Load Profiles, according to the measures defined in Section 12.4.
- (2) Removal of an existing Load Profile Segment requires changing assignments of existing ESI IDs currently in the proposed removed Load Profile Segment.

## **12.2 Request for Load Profile Segment Changes**

- (1) Any request for a change to Load Profile Segments shall be submitted in accordance with Section 2.4, Load Profiling Guide Revision Procedure.

## **12.3 Procedure for Submitting a Request**

- (1) ERCOT shall post a Load Profile Segment change request form to the ERCOT website. A completed application form shall accompany all requests for a Load Profile Segment change. Data sets, supporting files, and documentation shall be provided in electronic form.
- (2) If the originator of the Load Profile Segment change request is a Market Participant other than ERCOT, they shall indicate on the submitted form that they are requesting either a conditional or full approval of the change. Subsequent to submitting the form, the originator may amend the request from being conditional to full or vice versa by notifying ERCOT and the Profiling Working Group (PWG).

## **12.4 Groups of Electric Service Identifiers Eligible to Become Load Profile Segments**

- (1) For a group of Electric Service Identifiers (ESI IDs) to be a distinct Load Profile Segment, the group shall satisfy the following requirements:
- (a) The group is based on readily identifiable parameters, which are not subject to frequent change;
  - (b) The group is reasonably homogeneous as defined in Section 12.5.4, Homogeneity;
  - (c) The group is sufficiently different from other existing Load Profiles as defined in Section 12.5.2, Difference from Current Load Profiles; and

- (d) The group is of sufficient size to justify its own Load Profile Segment as defined in Section 12.5.3, Size.

#### ***12.4.1 Universal Load Profile Segment Applicability***

- (1) One primary goal is to make all Load Profile Segment definitions universally applicable. Universally applicable means:
  - (a) The Load Profile may be applicable to all Competitive Retailers (CRs);
  - (b) The Load Profile Segment shall be applied to any ESI ID in the ERCOT System that meets the eligibility criteria; and
  - (c) The Load Profile Segment shall be public.

### **12.5 Information Required with Request for Change**

- (1) All requests shall include the following:
  - (a) Unambiguous group identification;
  - (b) Difference from current Load Profile Segments;
  - (c) Size;
  - (d) Homogeneity; and
  - (e) Validation methodology.

#### ***12.5.1 Unambiguous Group Identification***

- (1) The definition of the group shall be provided in the request for the new Load Profile Segment. The request shall unambiguously define specific criteria for an Electronic Service Identifier (ESI ID) to be included in the new Load Profile Segment. In a request to change an existing Load Profile Segment, the group to be re-assigned shall be identified.

##### **12.5.1.1 Identification Based on Data Currently in ERCOT's Systems**

- (1) The most direct way a group may satisfy the requirement of being unambiguously identified occurs when the group may be identified based solely on information currently available in the ERCOT data systems or readily derived from such data.
- (2) Examples of information available in or derived from the ERCOT data systems include, but are not limited to:

- (a) Monthly or annual kWh consumption;
- (b) Metered monthly or annual peak Demand for Demand-metered Customers;
- (c) Monthly or annual Load factor;
- (d) Ratio of seasonal consumption values; and
- (e) Zone Improvement Plan (ZIP) code.

#### **12.5.1.2 Identification Based on Other Means**

- (1) Load Profile Segments based on other criteria may be requested. ERCOT, in coordination with the Profiling Working Group (PWG), shall evaluate such requests in terms of the feasibility and reliability of the proposed identification method. If the method requires data not currently in ERCOT's systems, the request shall describe how these data shall be made available to ERCOT on an ongoing basis. If the identification method is judged to be impractical or unreliable, the request may be denied.

#### **12.5.2 *Difference from Current Load Profile Segments***

- (1) A requested new Load Profile Segment shall be shown in the supporting documentation to be different from existing Load Profiles, and that the group re-assigned from one Load Profile Segment to another is more similar to the proposed new assignment(s) than to the old one, in ways that improve the accuracy of Settlement.
- (2) If the ESI IDs in the requested Load Profile Segment are different from the Load Profile Segment that they are currently assigned and more similar to another existing Load Profile Segment, then the resolution of the request may be to reassign these ESI IDs to the most similar existing Load Profile Segment.
- (3) Requests to create new Load Profile Segments or to change the definition of existing Load Profile Segments require supporting documentation to provide a basis for assessing differences between the affected group and existing Load Profile Segments. All differences between Load Profiles that are important for evaluating a change shall be documented in the request.

#### **12.5.2.1 Supporting Data Required**

- (1) Types of supporting data that may be submitted and the associated documentation are described in the following subsections.

**12.5.2.1.1 Load Research Data**

- (1) The best documentation would be a statistically valid Load research sample from the proposed new or re-assigned Load Profile Segment population.
- (2) The Load research sample design, data collection and statistical calculations shall be in compliance with industry accepted standards as defined in the Association of Edison Illuminating Companies (AEIC) Load Research Manual.
- (3) Examples of less rigorous, but supportive documentation would be other types of Load research data, such as:
  - (a) Data from ad-hoc or convenience samples; and
  - (b) Data from a similar population.
- (4) When less rigorous data is submitted, the submitter should also submit evidence to support the applicability of the data to the proposed Load Profile Segment population, including but not limited to:
  - (a) Documentation of operating schedules for the proposed group and comparison with typical schedules for Premises in the currently assigned Load Profile;
  - (b) End-use saturation data, comparing the proportions of Premises with particular types of electric end uses for the proposed group and currently assigned Load Profiles. Such data shall be relevant to the proposed population in ERCOT;
  - (c) Monthly billing data comparing consumption patterns, particularly related to heating and cooling. These comparisons shall be made separately by Weather Zone or account for variations by Weather Zone.

**12.5.2.2 Basis for Assessment of Differences Based on Load Research Data**

- (1) In assessing differences between the initial profile segment and the requested profile segment, ERCOT shall use industry accepted standards as described in the AEIC Load Research Manual. The requester may submit analysis but is not required to do so.

**12.5.2.3 Accounting for Weather Zone Effects in Load Profile Comparisons**

- (1) Comparisons between Load Profiles shall take into account Weather Zone effects. These effects may be accounted for in the comparisons in one of two ways:
  - (a) The comparison between the proposed Load Profile Segment and the existing Load Profile is made separately for each Weather Zone; and

- (b) A single Load Profile representing the proposed Load Profile Segment as a whole is compared with a single composite Load Profile for the existing Load Profile Segment.
- (2) These methods are not required for Load Profiles that are the same across all Weather Zones.

#### **12.5.2.4 Separate Comparisons for Each Weather Zone**

- (1) If Load research data for individual sample Customers are provided for the proposed segment, a separate Load Profile may be constructed for each Weather Zone.
- (2) The limitation of separate comparisons by Weather Zone is that some or all of the separate Weather Zone Load Profiles may have large statistical errors due to low sample sizes. The magnitude of these errors should be considered in assessing the comparisons.

#### **12.5.2.5 Comparison for the Proposed Segment as a Whole**

- (1) If a single Load Profile is estimated for the proposed Load Profile Segment as a whole across several Weather Zones, this Load Profile may be compared with a composite of existing Load Profiles. The composite existing Load Profile will be constructed using the standards described in the AEIC Load Research Manual.

#### **12.5.3 *Size***

- (1) Supporting documentation shall show that the population represented by the proposed segment(s) is of sufficient size to justify a separate segment. Size shall be provided in terms of both number of Customers and total energy consumption.
- (2) If the proposed Load Profile Segment is identified based on information available in the ERCOT data systems and also available to the requesting party, documentation of the total ESI ID count and annual energy use is sufficient. ERCOT shall verify this information using the ERCOT data systems.
- (3) If the requesting party has information on only a portion of the population represented by the segment, the request shall include estimates of the ESI ID counts and energy use, and documentation of the basis for the estimates.

#### **12.5.4 *Homogeneity***

- (1) For a new Load Profile Segment, the request shall provide evidence that the requested group is homogeneous with respect to Load shape characteristics. For a

change to definitions of existing Load Profile Segments, the request shall provide evidence that the re-defined Load Profile Segments are homogeneous in support of the change in definition.

#### **12.5.4.1 Load Research Demonstrating Homogeneity**

- (1) Evidence of homogeneity may be provided by a statistically valid Load research sample from the population of the requested Load Profile Segment(s).
- (2) Alternatively, data from case studies or samples of convenience may be provided. This may include but is not limited to:
  - (a) Survey data or other evidence of appliance or equipment present in the Premises;
  - (b) Data on operating schedules; and
  - (c) Variances of parameters of monthly billing data, such as size, ratio of Seasonal consumption values, or Load factors.

#### **12.5.4.2 Other Supporting Evidence of Homogeneity**

- (1) Less direct evidence of Load shape homogeneity may be submitted. Examples of such evidence include:
  - (a) Survey data or other evidence of appliance or equipment present in the Premises;
  - (b) Data on operating schedules; and
  - (c) Variances of parameters of monthly billing data, such as size, ratio of seasonal consumption values, or Load factors.

#### **12.5.5 *Quality Assurance Methodology for Electric Service Identifier Identification***

- (1) If the procedure for identifying ESI IDs applicable to the new Load Profile Segment relies on data that is not currently in ERCOT's systems, the requestor shall submit the description of a quality assurance procedure, to be managed by ERCOT, to assure that ESI IDs are assigned correctly to the Load Profile Segment and that they are removed from the Load Profile Segment when appropriate.
- (2) The described quality assurance procedure shall be accurate, workable, and reasonable in terms of cost and timeliness. An ideal quality assurance procedure would be one that enables ERCOT to have direct access to a data source of well established reliability, and is maintained by a disinterested third party. If the

validity of the data source has not been well established, a quality control sample, as described below, may be used for quality assurance purposes.

- (3) At a minimum, the quality assurance procedure shall meet a classification accuracy of  $\pm 5\%$  at 95% confidence such as could be obtained with a random sample for quality control purposes. If random sampling is identified as the quality assurance methodology, the sampling shall be managed and administered by ERCOT.
- (4) Adequacy of the quality assurance methodology shall be a primary consideration in deciding whether to approve or disapprove the Load Profile Segment change request.

## **12.6 Costs for Profile Segment Changes**

- (1) The party requesting the segment change shall bear all costs associated with developing the supporting data and documentation that is submitted to ERCOT for evaluation of the proposed Load Profile Segment changes. In addition, the requestor shall bear all costs, except for ERCOT's analytical costs, for additional Load research required in conjunction with a request for conditional approval of a Load Profile Segment change.
- (2) In the event the change is approved, costs for implementing the changes in ERCOT data systems shall be the responsibility of ERCOT. Responsibility for re-assigning Load Profiles remains with the Transmission and/or Distribution Service Provider (TDSP).
- (3) If a Load Profile Segment change request receives final approval under the provisions of the Load Profiling Guide (LPG), and results in the adoption of a new Load Profile Segment available to all Competitive Retailers (CRs), the provisions of Protocol Section 9.18, Profile Development Cost Recovery Fee for a Non-ERCOT Sponsored Load Profile Segment, shall be followed to provide for compensating the requestor by CRs seeking to assign Customers to the Load Profile Segment. Once a Load Profile Segment change request receives final approval, any subsequent costs required for ongoing support of the Load Profile Segment shall be considered part of the usual operation and maintenance expense for Load Profile Segments available for use by all CRs.

## **12.7 Evaluation of the Load Profile Segment Request**

- (1) ERCOT shall evaluate the request based on Load research standards described in the Association of Edison Illuminating Companies (AEIC) Load Research Manual.



# **ERCOT Load Profiling Guide**

## **Section 13: Changes to Weather Zone Characteristics**

**April 1, 2017**

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## **13 CHANGES TO WEATHER ZONE CHARACTERISTICS**

- (1) Changes to Weather Zones and any combination thereof that may be requested including changes in:
  - (a) Weather Zone boundary definitions;
  - (b) Boundaries of weather modeling regions;
  - (c) Weather stations used; and
  - (d) Weighting factors assigned to weather stations used within a Weather Zone.
- (2) Any change to Load Profile ID assignments resulting from an approved modification to the definitions of Weather Zones shall only be applied on a prospective basis.
- (3) Sufficient documentation shall be provided to demonstrate that the Weather Zone modification improves the accuracy of Settlement.

### **13.1 General Guidelines for Weather Zone Changes**

#### ***13.1.1 Uniformity***

- (1) Weather Zone characteristics shall be applied to all Electric Service Identifiers (ESI IDs) located within the geographic boundaries of the Weather Zone. Zone Improvement Plan (ZIP) codes are mapped to Weather Zones and are defined by the ZIP-to-Zone mapping in the Appendix D, Profile Decision Tree.

### **13.2 Changes to Weather Zone Boundaries**

#### ***13.2.1 Types of Weather Zone Boundary Changes***

- (1) Changes to Weather Zone boundaries and any combination thereof, may occur due to the following conditions:
  - (a) Subdivision: An existing Weather Zone is divided into two or more zones;
  - (b) Boundary shifting: Existing Weather Zone boundaries are moved so that areas are shifted between Weather Zones; or

- (c) Boundary collapsing: Existing Weather Zone boundaries are moved so that one Weather Zone is created from two or more existing Weather Zones.
- (2) When creating a new Weather Zone, the other zones affected by the boundary change shall satisfy the Weather Zone criteria in Section 13.2.2, Eligible Areas for Weather Zones.

### ***13.2.2 Eligible Areas for Weather Zones***

- (1) Each Weather Zone that results from a requested Weather Zone boundary change shall be a geographically contiguous area defined by identifiable physical, Transmission and/or Distribution Service Provider (TDSP) territory, or Zone Improvement Plan (ZIP) code boundaries.

#### **13.2.2.1 Size**

- (1) The requested Weather Zone changes shall be shown in supporting documentation to be of sufficient size, both in number of Customers and in total energy consumption, to justify the changes. While no explicit size threshold is set, the size of each proposed new or changed Weather Zone shall be considered in evaluating a Weather Zone change request.

#### **13.2.2.2 Weather Stations**

- (1) Only weather data from National Oceanic and Atmospheric Administration (NOAA) first or second order weather stations shall be used in model calculations. Each proposed new or changed Weather Zone shall have at least two NOAA first or second order weather stations to represent it. No weather station is permitted to have more than 50% weighting factor within a Weather Zone.

### **13.3 Weather Zone Definition or Modeling Region Changes without a Change Request**

#### ***13.3.1 Changes Required Based on Changing Data Availability***

##### **13.3.1.1 Changes in National Oceanic and Atmospheric Administration Weather Station**

- (1) In the event National Oceanic and Atmospheric Administration (NOAA) discontinues or downgrades an existing weather station, ERCOT shall assess and propose reasonable adjustments.

**13.3.1.2 Changes in Zone Improvement Plan Codes**

- (1) ERCOT's Load Profiling Weather Zones are defined by the five digit Zone Improvement Plan (ZIP) codes. ZIP code changes within a current Weather Zone shall not require any special adjustments. The new ZIP code definitions shall be incorporated into profiling systems so that Electric Service Identifiers (ESI IDs) shall continue to be correctly assigned.
- (2) ZIP code changes that affect a Weather Zone boundary shall be incorporated into Weather Zone definitions with minimal change in definitions and assignments. When a ZIP code overlaps two or more Weather Zones, the entire new ZIP code shall be assessed for the proper Weather Zone assignment. A ZIP code shall be completely contained within only one Weather Zone.

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**Section 14: Load Profile ID Dispute Procedure**

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**14    LOAD PROFILE ID DISPUTE PROCEDURE..... 14-1**

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## **14 LOAD PROFILE ID DISPUTE PROCEDURE**

ERCOT and Market Participants shall adhere to this procedure for disputing Load Profile ID assignments.

### **14.1 Filing of a Load Profile ID Dispute**

ERCOT and any Market Participant, other than a retail Customer, may file disputes related to Load Profile ID assignments. Retail Customers with disputes, related to Load Profile ID assignments, shall first request resolution from their Competitive Retailers (CRs). The CR shall address the Customer's issue, and if necessary, request changes or corrections from ERCOT related to the retail Customer's request. A retail Customer who is not satisfied with the CR's response may appeal to the Public Utility Commission of Texas (PUCT) or the appropriate regulatory authority. ERCOT does not resolve such disputes.

### **14.2 General Load Profile ID Dispute Resolution Guidelines**

Transmission and/or Distribution Service Providers (TDSPs) and ERCOT share responsibility for the assignment of Load Profile IDs. Competitive Retailers (CRs) may request a Load Profile ID assignment change as a dispute of an existing Load Profile ID assignment. Requested changes to remove an Electric Service Identifier (ESI ID) from a default Load Profile ID should only be made after adequate monthly data becomes available.

#### ***14.2.1 Disputes Involving ERCOT***

- (1) Disputes involving ERCOT should be submitted using the MarkeTrak system for any of the following cases:
  - (a) Requests to remove an ESI ID from a default Load Profile ID - such requests should only be made after adequate monthly data becomes available;
  - (b) Disputes regarding ERCOT calculations made as a part of Annual Validation; and
  - (c) Disputes regarding ERCOT calculations relating to the weather sensitivity code.
- (2) ERCOT is responsible for all disputes defined in this Section all Profile Decision Tree versions, and all Annual Validation years.



### ***14.2.2 Disputes Involving Transmission and/or Distribution Service Providers***

All disputes related to Load Profile ID assignments other than those described in the preceding section must be addressed with each TDSP in accordance with their individual processes.

### ***14.2.3 Alternative Dispute Resolution***

If attempts to clarify or resolve the issue using one of the processes listed above are unsuccessful, parties should refer to Protocol Section 20, Alternative Dispute Resolution Procedure.

## **14.3 Resolutions of Disputes**

When the resolution of a dispute requires a change in a Load Profile ID assignment, the change shall be implemented by the Transmission and/or Distribution Service Provider (TDSP) issuing the appropriate Texas Standard Electronic Transaction (TX SET).

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## **Section 16: RESERVED**

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# **ERCOT Load Profiling Guide**

## **Section 17: RESERVED**

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# **ERCOT Load Profiling Guide**

## **Section 18: Access to Load Profiling Materials**

**November 1, 2016**

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**18 ACCESS TO LOAD PROFILING MATERIALS..... 18-1**

**18 ACCESS TO LOAD PROFILING MATERIALS**

- (1) The following Load Profiling related documents and materials may be found on the ERCOT website:
  - (a) Backcasted (Actual) Load Profiles – Extract files Load Profiles for individual trade days. The trade day occurring one day prior to the current date will be the most current backcast available;
  - (b) Forecasted Load Profiles – Files include current day and three days forward of forecasted Load Profiles;
  - (c) Historical Backcasted Load Profiles – Multiple years of Load Profile history for each Load Profile Type and Weather Zone combination; and
  - (d) Methodology – Description of materials used in preparation of Load Profiles – Documents that provide an evaluation of the utility data used to generate the ERCOT Load Profile Models.
- (2) Profiling Working Group (PWG) information and meetings may be found on the ERCOT website.

# **ERCOT Load Profiling Guide**

## **Section 19: Definitions and Acronyms**

**November 1, 2016**

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## 19 19 DEFINITIONS AND ACRONYMS

### 19.1 Definitions

The defined terms in this Section are limited to those used specifically in the Load Profiling Guide (LPG). Any additional defined terms used in the LPG can be found in Protocol Section 2, Definitions and Acronyms.

#### LINKS TO DEFINITIONS:

[A](#), [B](#), [C](#), [D](#), [E](#), [F](#), [G](#), [H](#), [I](#), [J](#), [K](#), [L](#), [M](#), [N](#), [O](#), [P](#), [Q](#), [R](#), [S](#), [T](#), [U](#), [V](#), [W](#), [X](#), [Y](#), [Z](#)

#### [List of Acronyms](#)

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##### **Adjusted Static Models**

Load Profiles that are generated from statistical models that are based on static historical Load data, and adjusted for conditions of the day (e.g., weather, Season, etc.)

##### **Annual Validation**

The formal process performed every year whereby ERCOT re-determines the first component of each Load Profile ID—the Load Profile Type—for Residential and Business Load Factor Electric Service Identifiers (ESI IDs). ERCOT then works with the Transmission and/or Distribution Service Providers (TDSPs) to have them update ERCOT’s databases with the resulting Load Profile ID changes via Texas Standard Electronic Transactions (TX SETs).

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##### **Business (BUS)**

Load Profile Group designation for non-residential Electric Service Identifiers (ESI IDs) whose service is metered. This encompasses rate classes for business ESI IDs, in addition to other classes.

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D [\[BACK TO TOP\]](#)

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### **Electric Service Identifier (ESI ID)**

*See Protocol Section 2.1, Definitions.*

#### ***Active ESI ID***

ESI ID is presently receiving service (energized) and a Retail Electric Provider (REP) is currently assigned to it in ERCOT's system.

#### ***De-Energized ESI ID***

ESI ID does not have a REP assigned in ERCOT's system, but has not been retired. An 814\_16, Move-In Request, is necessary to change to active status.

#### ***Inactive ESI ID***

ESI ID is retired and will never again receive service.

### **Engineering Estimated**

Estimated Loads based on engineering studies applied to unmetered Loads to allocate energy across specified periods of time.

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### **Interval Data Recorder (IDR) Requirement**



The kW level at which the installation of interval data recorders are required for settlement purposes as set forth in Protocol Section 18.6.1, Interval Data Recorder Meter Mandatory Installation Requirements.

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**K** [\[BACK TO TOP\]](#)

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### **Lagged Dynamic Profiling Methodology**

The use of an active set of Load research sample sites to build an aggregated Load Profile for the sample group from actual metered usage processed after the target day.

### **Load Profile Class**

A classification of a group of Customers having similar energy usage patterns and that are assigned the same Load Profile. Load Profile Class is comprised of a Load Profile Group and a Load Profile Segment. An example of a Load Profile Class: Residential Low Winter Ratio (RESLOWR). Load Profile Type and Load Profile Class are used interchangeably.

### **Load Profile Group**

A high-level classification of a set of Customers who have similar characteristics. The Load Profile Groups are: Non-Metered, Residential, and Business. Together, the Load Profile Group and the Load Profile Segment form the Load Profile Type.

### **Load Profile ID**

The Load Profile designation string that contains, the Load Profile Type Code, the Weather Zone Code, the Meter Data Type Code, the Weather Sensitivity Code, and the Time Of Use Schedule (TOUS) Code. All Load Profile IDs are listed in Appendix D, Profile Decision Tree.

### **Load Profile Models**

Processes that use analytical modeling techniques to create Load Profiles.

### **Load Profile Segment**

A sub-classification of a Load Profile Group. High Winter Ratio (HIWR) is an example. Together, the Load Profile Group and the Load Profile Segment form the Load Profile Type.

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### **Meter Data Type**

The component of the Load Profile ID that identifies the type of meter data—either interval (IDR) or non-interval (NIDR)—that is to be submitted to ERCOT by the Transmission and/or Distribution Service Provider (TDSP) and used for settlement.

## **N [\[BACK TO TOP\]](#)**

## **O [\[BACK TO TOP\]](#)**

### **Opt-In Entity**

A Municipally Owned Utility (MOU) or Electric Cooperative (EC) opting-in to Customer Choice.

## **P [\[BACK TO TOP\]](#)**

### **Power Factor**

The ratio of real power (kW) to the apparent power (kVA) for any given Load and time.

### **Profile Decision Tree**

The document that contains the directions for determining the Load Profile ID to be assigned to an Electric Service Identifier (ESI ID).

**Profile Type (*see* Load Profile Class)****Q** [\[BACK TO TOP\]](#)**R** [\[BACK TO TOP\]](#)**Residential (RES)**

Load Profile Group designation for Electric Service Identifiers (ESI IDs) served within a residential rate class.

**S** [\[BACK TO TOP\]](#)**Segmentation**

The process of dividing a population into a number of sub-sets, according to certain parameters, for the purpose of creating Load Profiles for sub-sets of the population.

**T** [\[BACK TO TOP\]](#)**Target Profile**

The Target Profile is the best available estimated Load shape for a particular proposed subgroup.

**U** [\[BACK TO TOP\]](#)**V** [\[BACK TO TOP\]](#)**W** [\[BACK TO TOP\]](#)**Winter Ratio**

The proportion of usage in winter months to usage in the fall base and spring base months and is used to differentiate residential Electric Service Identifiers (ESI IDs).

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**Y** [\[BACK TO TOP\]](#)

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## **19.2 ACRONYMS**

The defined terms in this Section are limited to those used specifically in the Load Profiling Guide (LPG). Any additional defined terms used in the LPG can be found in Protocol Section 2, Definitions and Acronyms.

<b>COPS</b>	Commercial Operations Subcommittee
<b>DR</b>	Demand Response
<b>HIWR</b>	High Winter Ratio
<b>LPG</b>	Load Profiling Guide
<b>LPGRR</b>	Load Profiling Guide Revision Request
<b>MAD</b>	Mean Absolute Deviation
<b>MAPE</b>	Mean Absolute Percent Error
<b>NIDR</b>	Non-Interval Data Recorder
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NODEM</b>	Non-Demand
<b>NOTOU</b>	Non-Time Of Use
<b>NWS</b>	Non-Weather Sensitive
<b>PWG</b>	Profiling Working Group
<b>LOWR</b>	Low Winter Ratio
<b>RMSE</b>	Root Mean Square Error

# **ERCOT Load Profiling Guide**

## **Appendix A**

**October 1, 2010**

<b>APPENDIX A.....</b>	<b>1</b>
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## Appendix A

Appendix intentionally left blank

# **ERCOT Load Profiling Guide**

## **Appendix B**

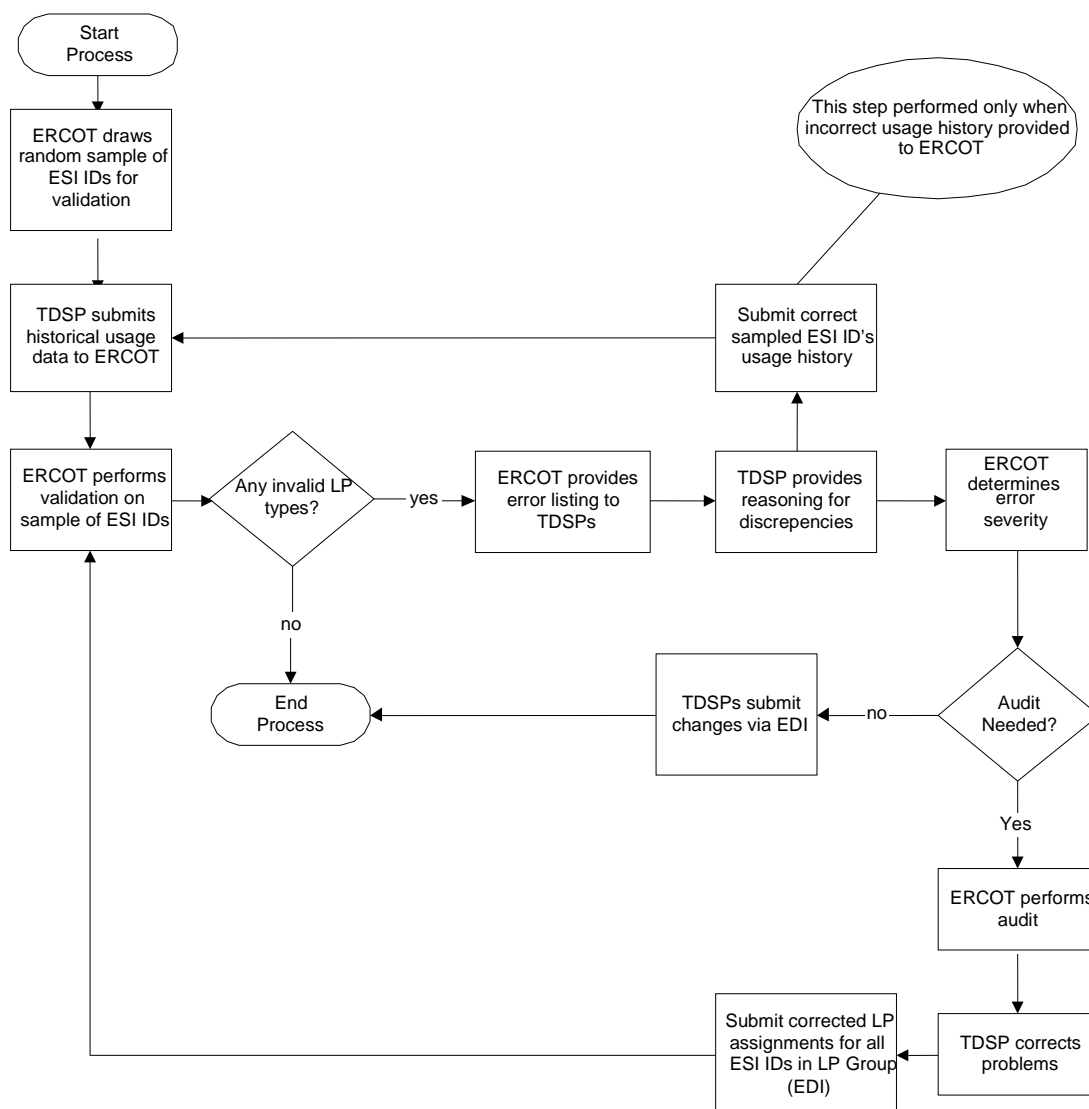
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**APPENDIX B .....1**

## Appendix B

### Validation of Initial Assignment of Load Profile Type Code



# **ERCOT Load Profiling Guide**

## **Appendix C**

**November 1, 2016**

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## **Appendix C**

Appendix intentionally left blank

## Steps for Assigning a Profile Segment

### Overview:

After determining the appropriate Profile Group (NM, RES, or BUS) the next step is to determine the correct Profile Segment, per the instructions below. For any value that is to be rounded, follow the Rounding instructions on the Definitions tab. Information on the terms below can be found on the Definitions tab and the Usage Month Methodology tab.

### I. Non-Metered (NM)

- A. Assign the LIGHT Profile Segment for all Non-Metered lighting load, e.g., street lights.
- B. Assign the FLAT Profile Segment for all Non-Metered load that is not identified as lighting, e.g., traffic signals.

### II. Residential (RES)

**Usage Time Period: The four-year period ending May 31 of the current calendar year (inclusive)**

For each ESI ID, step through 'A' and then 'B' or 'C' below as appropriate to determine the applicable Profile Segment. Then follow the instructions in 'D' below for ESI IDs that have Distributed Generation (per the DG tab).

- A. Assign the default Profile Segment for the initial assignment of all new Residential ESI IDs as directed below. Please refer to the Load Profiling Guide for Opt-In and transition assignments.

If Weather Zone = COAST or if Weather Zone = FWEST then  
assign LOWR  
else assign HIWR.

COAST default = LOWR	NORTH default = HIWR
EAST default = HIWR	SCENT default = HIWR
FWEST default = LOWR	SOUTH default = HIWR
NCENT default = HIWR	WEST default = HIWR

- B. For Annual Validation, assign the applicable Profile Segment for each ESI ID based on the steps below. Because the steps below are not mutually exclusive, it is necessary to step through each of the following in the order listed, for each ESI ID, until an applicable case is found. Once an applicable case has been found follow the instructions below in Section C. Distributed Generation Profile Segment determination.

1. For each RES ESI ID, identify all usage data for which the entire meter read period falls between Sep 20 and May 10 (inclusive) for the various years of the Usage Time Period and spans no longer than 44 days. Use the resulting data from this step in the subsequent steps.

Note: Step 1 allows for only the Winter and Shoulder meter reads to be included in the subsequent steps to determine the Segment assignment. Meter reads are to be classified as Winter or Shoulder reads in step 2.

2. For each meter read usage value determine if the read is a Winter or a Shoulder season for each RES ESI ID.

If start date ≥ Dec 01 or stop date ≤ Mar 01 then season = Winter  
else if start date ≥ Sept 20 and stop date ≤ Dec 01 then  
season = Shoulder  
else if start date ≥ Mar 01 and stop date ≤ May 11 then  
season = Shoulder  
otherwise calculate shoulder percent as follows:  
if the read spans Dec 01 then  
shoulder\_percent = (Dec 01 - start date) / (stop date - start date)  
if the read spans Mar 01 then  
shoulder\_percent = (Mar 01 - start date) / (stop date - start date)  
if shoulder\_percent ≥ 0.6 then season = Shoulder  
if shoulder\_percent ≤ 0.4 then season = Winter  
if a meter read has not been classified by season above then disregard the read

3. Calculate Average Daily Use for the meter read period ( $ADUse_p$ ) and assign a year value for each reading for each ESI ID.

$$ADUse_p = \left( \frac{kWh_p}{Days_p} \right)$$

Let

yy = July 1st of current year  
yy-1 = July 1st of last year  
yy-2 = July 1st of two years ago

## Steps for Assigning a Profile Segment

yy-3 = July 1st of three years ago

If stop date < yy-3 then  
     year value = 1  
 else if stop date < yy-2 then  
     year value = 2  
 else if stop date < yy-1 then  
     year value = 3  
 else year value = 4

4. Calculate the mean and standard deviation (stdev) of the Average Daily Use (ADUse<sub>p</sub>) for each ESI ID. If stdev > 0 then create a normalized ADUse<sub>p</sub> (NADUse<sub>p</sub>), use the NADUse<sub>p</sub> to identify outliers and set their reading usage values and ADUse<sub>p</sub> to null.

$$NADUse_p = \left( \frac{ADUse_p - \overline{ADUse}}{stdev} \right)$$

where

$$\overline{ADUse} = \left( \frac{\sum_{p=1}^n ADUse_p}{n} \right)$$

$$stdev = \sqrt{\frac{\sum_{p=1}^n (ADUse_p - \overline{ADUse})^2}{n - 1}}$$

and  $n$  = number of meter readings for the ESI ID

If NADUse<sub>p</sub> > 3.5 or  
     if NADUse<sub>p</sub> > 3 and ADUse<sub>p</sub> > 100 or  
     if NADUse<sub>p</sub> < -2 or  
     if NADUse<sub>p</sub> < 5 then  
         kWh<sub>p</sub> = null  
         ADUse<sub>p</sub> = null  
 else  
     kWh<sub>p</sub> = kWh<sub>p</sub>  
     ADUse<sub>p</sub> = ADUse<sub>p</sub>

5. Count the number of readings that have a usage value (not null) for each Season and continue with Step 6 for those ESI IDs that have more than two Winter readings and more than two Shoulder readings. For those ESI IDs that do not have sufficient number of readings do not change the current Load Profile Type assignment.

6. For each meter reading time period compute the RESHIWR kWh<sub>p</sub> and the RESLOWR kWh<sub>p</sub> by summing the kWh interval values separately for the RESHIWR and RESLOWR backcasted profiles (available on the Load Profiling page at [www.ercot.com](http://www.ercot.com)) corresponding to the specific days in meter reading period "p".

7. Compute the ESI ID year use, RESHIWR year use, and RESLOWR year use by summing the kWh<sub>p</sub>, RESHIWR kWh<sub>p</sub>, and RESLOWR kWh<sub>p</sub> respectively for each year value as determined in Step 3 above.

8. For each year value compute a scaled RESHIWR kWh use and a scaled RESLOWR kWh use for each meter reading.

$$S \text{ RESHIWR } kWh_p = \frac{RESHIWR \text{ kWh}_p \times \text{ESI ID year use}}{RESHIWR \text{ year use}}$$

$$S \text{ RESLOWR } kWh_p = \frac{RESLOWR \text{ kWh}_p \times \text{ESI ID year use}}{RESLOWR \text{ year use}}$$

9. Determine the correlation ( $R^2$ ) to the RESHIWR and RESLOWR profiles for each ESI ID. The correlations are determined with a weighted linear regression analysis.

## Steps for Assigning a Profile Segment

Each reading is weighted as follows:

If season = Winter  
 and RESLOWR kWh<sub>p</sub> > 0  
 and RESHIWR kWh<sub>p</sub> > RESLOWR kWh<sub>p</sub> then  
 weight<sub>p</sub> = 2(RESHIWR kWh<sub>p</sub> / RESLOWR kWh<sub>p</sub>)  
 else weight<sub>p</sub> = 1

$$R^2 = 1 - (SSE / TSS)$$

where  $SSE = \sum w_i (y_i - B_1 x_i)^2$

$$TSS = \sum w_i y_i^2$$

$$B_1 = \frac{\sum w_i x_i y_i}{\sum w_i x_i^2}$$

$w_i = \text{weight}_p$

$y_i = \text{kWh}_p$

$x_i = \text{S RESHIWR kWh}_p \text{ or S RESLOWR kWh}_p$

10. Identify the Winter Max ADUse<sub>p</sub> for each ESI ID for the entire usage time period.

11. For each ESI ID, assign either HIWR (High Winter Ratio) or LOWR (Low Winter Ratio) based on the results of the previous steps, as follows. Because A thru D below are not mutually exclusive, it is necessary to step through each of the following in the order listed, for each ESI ID, until an applicable case is found. (Please note that the breakpoint values below are subject to change periodically.)

If the ESI ID's Winter Max ADUse<sub>p</sub> < 20 kWh/day then assign LOWR  
 else if the ESI ID's correlation to the RESHIWR profile > 0.60  
 and the correlation to the RESHIWR profile > correlation to the RESLOWR profile  
 then assign HIWR  
 else if the number of readings available > 9  
 and the correlation to the RESHIWR profile > 0.90  
 and (the correlation to the RESHIWR profile + 0.009) > the correlation to the RESLOWR  
 and Winter Max ADUse<sub>p</sub> > 53 kWh/day then assign HIWR  
 else assign LOWR

C. For each ESI ID with a meter data type of IDR, perform the following.

1. Determine a list of ESI IDs that were active on January 1 of the year two years prior to the current year.
2. Calculate two variables for each day on which the ESI ID is active and for which the actual interval data is available for the following months.

January of the current year	February of the current year
January of the previous year	February of the previous year
January from two years ago	February from two years ago

The two variables are:

- (a) Daily kWh; and
- (b) Average Weather Zone daily dry bulb temperature.

ESI IDs must have at least 90% of the total monthly intervals for all six months to proceed to step 3.

3. Calculate R-square (Pearson Product Moment Coefficient of Determination) values between these two variables, for each of the six months listed above.

4. For each ESI ID, assign the appropriate Profile Segment based on A thru B below.

- a. If the existing assignment is LOWR (or a DG variation such as LOPV) then

## Steps for Assigning a Profile Segment

if the required data were not available to calculate R-square values for *any* of the six months then  
do not change assignment;  
else if *any three* of the six R-square values is  $\geq 0.6$  then  
assign HIWR;  
else do not change assignment.

- b. If the existing assignment is HIWR (or a DG variation) then  
if the required data were not available to calculate R-square values for *each* of the six months then  
do not change assignment;  
else if *all* of the six R-square values are  $\leq 0.4$  then  
assign LOWR;  
else do not change assignment.

D. Assign a DG Profile Segment as directed by ERCOT, per the DG tab.

1. If the ESI ID has any PV generation then  
if segment is determined to be HIWR then assign HIPV;  
else if segment is determined to be LOWR then assign LOPV;
2. Else if the ESI ID has wind generation then  
if segment is determined to be HIWR then assign HIWD;  
else if segment is determined to be LOWR then assign LOWD;
3. Else if the ESI ID has other DG then  
if segment is determined to be HIWR then assign HIDG;  
else if segment is determined to be LOWR then assign LODG.

### III. Business (BUS)

**Assignment Year for Average Load Factor calculations: The previous calendar year (January through December) will be used to calculate the Average Load Factor.**

For each ESI ID, assign the applicable Profile Segment based on the steps below. Because the steps below are not mutually exclusive, it is necessary to step through each of the following in the order listed, for each ESI ID, until an applicable case is found. Once an applicable case has been found follow the instructions in 'E' below for ESI IDs that have Distributed Generation (per the DG tab).

A. Assign the IDRRQ ('IDR required') Profile Segment to all BUS ESI IDs required to have an IDR Meter, per Section 18 of the ERCOT Nodal Protocols.

B. Assign the OGFLT (Oil & Gas Flat) Profile Segment to:  
ESI IDs for which ERCOT has informed the TDSP that OGFLT should be assigned per the Oil & Gas tab.

C. Assign the NODEM Profile Segment for non-residential ESI IDs which are not billed demand.

D. Determine the Average Load Factor (AvgLF) for ESI IDs that were not assigned a Profile Segment in Steps 1, 2, or 3 above.

1. Determine Usage Month values ( $ActiveDays_m$ ,  $kWDays_m$ ,  $kWh_m$ ,  $MaxkW_m$ , and  $ADUse_m$ ) for each ESI ID for the 12 months of the Assignment Year, which is listed near the beginning of Section III.
2. Compute the Average Hourly Usage ( $AHUse_m$ ) for the Usage Months of the Assignment Year.

$$AHUse_m = \left( \frac{kWh_m}{ActiveDays_m \times 24} \right)^*$$

where  $kWh_m$  = consumption in kilowatthours in Usage Month  $m$ , and  
 $ActiveDays_m$  = Number of Active Days in Usage Month  $m$ .

\* Round to two decimal places, per the Rounding instructions on the Definitions tab.



## Steps for Assigning a Profile Segment

3. Compute the Average Load Factor (AvgLF) as shown below for the Usage Months of the current Assignment Year. TDSPs that measure kVA at the ESI ID level should reference the 'kVA to kW' tab before proceeding. The Average Load Factor is a weighted average of the individual monthly load factors, where demand levels are used to define the weights (presented in a mathematically equivalent calculation below).  $AHUse_m$  and  $MaxkW_m$  values are required for each of the 12 months of the current Assignment Year in order to calculate AvgLF.

$$AvgLF = \left[ \frac{\left( \sum_{m=1}^{12} AHUse_m \right)^*}{\sum_{m=1}^{12} MaxkW_m} \right]^*$$

where  $AHUse_m$  = Average Hourly Use in Usage Month  $m$  as previously defined, and

$MaxkW_m$  = Maximum metered kW Demand in Usage Month  $m$ , as defined on the Usage Month methodology tab.

\* Round to two decimal places, per the Rounding instructions on the Definitions tab.

4. For each ESI ID, assign the appropriate Profile Segment based on A thru G below. Because A thru G below are not mutually exclusive, it is necessary to step through each of the following in the order listed, for each ESI ID, until an applicable case is found. (Please note that the breakpoint values below are subject to change periodically.)

- a. If there is no existing assignment then
  - if the required data were not available to calculate the AvgLF\*\* then
    - assign MEDLF;
  - else if data were available (e.g., for Opt-in entities) to calculate the AvgLF then
    - if the AvgLF < 0.40 then
      - assign LOLF;
    - else if  $0.40 \leq AvgLF \leq 0.60$  then
      - assign MEDLF;
    - else assign HILF.
- b. If the existing assignment is LOLF (or a DG variation, such as LOWD) then
  - if the required data were not available to calculate the AvgLF\*\* then
    - do not change assignment from LOLF;
  - else if the AvgLF < 0.40 then
    - do not change assignment from LOLF;
  - else if  $0.40 \leq AvgLF \leq 0.60$  then
    - assign MEDLF;
  - else assign HILF.
- c. If the existing assignment is MEDLF (or a DG variation) then
  - if the required data were not available to calculate the AvgLF\*\* then
    - do not change assignment from MEDLF;
  - else if the AvgLF < 0.40 then
    - assign LOLF;
  - else if  $0.40 \leq AvgLF \leq 0.60$  then
    - do not change assignment from MEDLF;
  - else assign HILF.
- d. If the existing assignment is HILF (or a DG variation) then
  - if the required data were not available to calculate the AvgLF\*\* then
    - do not change assignment from HILF;
  - else if the AvgLF < 0.40 then
    - assign LOLF;
  - else if  $0.40 \leq AvgLF \leq 0.60$  then
    - assign MEDLF;
  - else do not change assignment from HILF.
- e. If the existing assignment is IDRRQ then
  - if the required data were not available to calculate the AvgLF\*\* then
    - assign MEDLF;
  - else if the AvgLF < 0.40 then

## Steps for Assigning a Profile Segment

assign LOLF;  
else if  $0.40 \leq \text{AvgLF} \leq 0.60$  then  
assign MEDLF;  
else assign HILF.

f. If the existing assignment is NODEM (or a DG variation) then  
if the required data were not available to calculate the AvgLF\*\* then  
assign MEDLF;  
else if the AvgLF < 0.40 then  
assign LOLF;  
else if  $0.40 \leq \text{AvgLF} \leq 0.60$  then  
assign MEDLF;  
else assign HILF.

g. If the existing assignment is neither LOLF, MEDLF, HILF, IDRRQ, nor NODEM  
if the required data were not available to calculate the AvgLF\*\* then  
assign MEDLF;  
else if the AvgLF < 0.40 then  
assign LOLF;  
else if  $0.40 \leq \text{AvgLF} \leq 0.60$  then  
assign MEDLF;  
else assign HILF.

\*\* or if the mathematical calculation of the AvgLF is undefined due to a zero (0) in the denominator

E. Assign a DG Profile Segment as directed by ERCOT, per the DG tab.

1. If the ESI ID would otherwise be assigned IDRRQ then  
assign IDRRQ;
2. Else if the ESI ID has any PV generation then  
if segment is determined to be HILF then assign HIPV;  
else if segment is determined to be MEDLF then assign MEDPV;  
else if segment is determined to be LOLF then assign LOPV;  
else if segment is determined to be NODEM then assign NODPV;  
else if segment is determined to be OGFLT then assign OGFPV;
3. Else if the ESI ID has wind generation then  
if segment is determined to be HILF then assign HIWD;  
else if segment is determined to be MEDLF then assign MEDWD;  
else if segment is determined to be LOLF then assign LOWD;  
else if segment is determined to be NODEM then assign NODWD;  
else if segment is determined to be OGFLT then assign OGFWD;
4. Else if the ESI ID has other DG then  
if segment is determined to be HILF then assign HIDG;  
else if segment is determined to be MEDLF then assign MEDDG;  
else if segment is determined to be LOLF then assign LODG;  
else if segment is determined to be NODEM then assign NODDG;  
else if segment is determined to be OGFLT then assign OGFDG.

# **ERCOT Load Profiling Guide**

## **Appendix D: Profile Decision Tree**

**April 1, 2017**

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## **Appendix D**

### **Profile Decision Tree**

**See electronic Microsoft Office Excel© file on the ERCOT Website posted with the Load Profiling Guide**

# **ERCOT Load Profiling Guide**

## **Appendix E: Load Profile Model Spreadsheets**

**February 1, 2016**

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## **Appendix E**

### **Load Profile Model Spreadsheets**

**See electronic Microsoft Office Excel© files on the ERCOT Website posted with the Load Profiling Guide.**

These files are a representation of the Load Profile Models used in settlements.