



Control Number: 47472



Item Number: 68

Addendum StartPage: 0

PUC DOCKET NO. 47472

RECEIVED

COMMISSION STAFF'S PETITION TO
DETERMINE REQUIREMENTS FOR
SMART METER TEXAS

§
§
§

2017 OCT 19 PM 2:55
BEFORE THE
PUBLIC UTILITY COMMISSION
OF TEXAS
FILING CLERK

**DIRECT TESTIMONY OF RAY CUNNINGHAM ON BEHALF OF ENGIE
RESOURCES LLC**

October 19, 2017

68

**DIRECT TESTIMONY OF RAY CUNNINGHAM ON BEHALF OF
ENGIE RESOURCES LLC**

1 **I. WITNESS QUALIFICATIONS AND BACKGROUND**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, EMPLOYER,**
3 **AND POSITION.**

4 A. Ray Cunningham, 1990 Post Oak Blvd, #1900, Houston, Texas, 77056, Vice
5 President and General Counsel of ENGIE Resources LLC ("ENGIE"), a licensed retail
6 electricity provider ("REP"), REP Certification No. 10053, primarily serving large
7 commercial and industrial customers. ENGIE and relevant affiliates are described further
8 below.

9 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND**
10 **BUSINESS EXPERIENCE.**

11 A. For the past 13 years, I have been employed as an attorney by ENGIE North
12 America Inc. or one of its predecessors or subsidiaries. I have worked in the wholesale
13 trading business unit (responsible for FERC compliance and wholesale transactional
14 matters) and in the retail business unit (responsible for regulatory/compliance matters in
15 all states and all retail transactional matters). Prior to ENGIE, I was employed by
16 ExxonMobil, where I developed and implemented ExxonMobil strategies for retail
17 competitive electricity transactions in the Electric Reliability Council of Texas
18 ("ERCOT") in response to restructuring (Senate Bill 7, 1999). I have been a licensed
19 Texas attorney licensed since 1993.

1 Prior to my legal career, I worked as a Chemical Engineer with Amoco Chemical
2 Company for approximately 6 years. I have a Bachelor of Science in Chemical
3 Engineering from Texas Tech University, 1986.

4 I have provided a copy of my resume as Exhibit A.

5 **Q. WHAT ARE THE DUTIES AND RESPONSIBILITIES OF YOUR**
6 **PRESENT POSITION?**

7 A. In my current role, I am responsible for the following:

- 8 • Manage legal and administrative staff for the retail business unit;
- 9 • Negotiate retail electricity sales contracts with large C&I customers;
- 10 • Provide legal support to expand business into residential and solar sectors;
- 11 • Manage/support M&A activities for the retail business unit, including
- 12 performing legal due diligence of target company data room, negotiation of
- 13 purchase and sale agreements, and regulatory compliance;
- 14 • Provide legal support, drafting and negotiation of various agreements
- 15 including demand response, intellectual property, joint marketing
- 16 arrangements, broker contracts, and settlement agreements;
- 17 • Manage regulatory/compliance issues in all states affecting the retail business
- 18 unit; and
- 19 • Manage litigation involving employment and collection issues.

20 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING?**

21 A. I am testifying on behalf of ENGIE.

22 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?**

23 A. No.

1 **II. PURPOSE OF TESTIMONY**

2 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

3 A. ENGIE's overarching goal is to simplify and streamline the process used to obtain
4 or share Smart Meter Texas ("SMT") data in order to enable retail electric consumers (or
5 "Customers") to get the energy products and services they want in simple, easy, seamless
6 transactions. To this end, the purpose of my testimony is to describe three proposed
7 changes to SMT that are needed to achieve this goal: (i) elimination of the requirement
8 that the customer register or create an SMT account, (ii) the use of a simple Customer
9 consent process that uses the same process as the existing Centerpoint Energy "CRIP"
10 Portal (i.e. an online check the box which reps/warrants the requestor has obtained
11 consent, or a scanned letter of authorization from the customer), and (iii) use of the Green
12 Button Connect My Data application program interface ("API").

13 **III. BACKGROUND**

14 **Q. PLEASE DESCRIBE ENGIE.**

15 A. ENGIE is based in Houston, Texas. It is a Top Ten non-residential retail
16 electricity supplier in the United States and currently serves commercial, industrial, and
17 institutional customers in 14 states. ENGIE's subsidiary Think Energy provides service
18 to residential and small commercial customers. ENGIE provides supply to over 90,000
19 customer accounts totaling nearly 10,000 MW of peak load.

20 Globally, ENGIE's affiliated companies are publicly traded in various
21 international indices. Combined, the ENGIE group employs almost 155,000 people
22 worldwide in the sectors of renewable energy, energy efficiency, liquefied natural gas
23 ("LNG"), and digital technology. They achieved \$77.6 billion in revenues in 2015. In

1 North America, ENGIE and its affiliates provide retail electricity, energy services, LNG,
2 and/or power generation including cogeneration, steam, and chilled water facilities,
3 combined heat and power units, wind, solar, and biomass/biogas assets.

4 **Q. PLEASE DESCRIBE SMT.**

5 A. SMT “stores daily, monthly and 15-minute intervals electric usage data recorded
6 by digital electric meters” and “provides secure access to that data to customers and
7 authorized market participants (including through the use of ‘Green Button’).”¹ SMT
8 helps put to use the data that is accessible after Texas’s multi-billion dollar investment in
9 advanced metering in recent years.²

10 **Q. WHAT IS THE GREEN BUTTON?**

11 A. The Green Button initiative is an industry response to a 2011 White House call to
12 action.³ Over 50 utilities and energy providers and the U.S. Department of Energy
13 support the Green Button initiative.⁴ The Green Button standard consists of technical
14 standard schema and implementation guidelines that provide: “(1) A standardized format
15 for the collection of electricity, natural gas and water consumption, billing and generation
16 data; (2) A common interface for the exchange of this data; and, (3) A method to securely
17 authorize solution provider[’]s access to customer usage information.”⁵ “By

¹ SMT FAQs, available at https://www.smartmetertexas.com/CAP/public/home/home_faq.html#a1.

² “Texas residential and small and medium sized commercial consumers in the competitive retail electricity market in ERCOT have paid roughly \$2.5B for the deployment of advanced meters and related infrastructure.” See Robert King and Rob Bevell, *Improving Access to Smart Meter Data in Texas* at 5 (October 2016), available at <https://eepartnership.org/wp-content/uploads/2016/10/Meter-Data-Access-Report-FINAL.pdf>.

³ See Jeff St. John, “New Report Highlights the Costs of Ongoing Utility-Customer Data Divide” (February 2016), available at <https://www.greentechmedia.com/articles/read/new-report-highlights-the-costs-of-ongoing-utility-customer-data-divide#gs.pkMkK4M>.

⁴ See <https://energy.gov/data/green-button>.

⁵ *Green Button “Connect My Data” Implementation Guide for Electricity Utilities in Ontario* (2016), available at <https://static1.squarespace.com/static/513e8333e4b072a68c081024/t/583df7c0d482e9bbbe0b2db6/1480456132560/2016-08-05-CMD+Implementation+Guide+for+Electric+Utilities+in+Ontario+Final.pdf>.

1 standardizing and modernizing this process and by improving data access for energy
2 solution providers, Green Button plays into the growing smart grid market, a market that
3 recent studies indicate may reach \$118 billion by 2019.”⁶

4 Green Button has two main products: **Download** My Data, which allows
5 customers to download their usage data, and **Connect** My Data, which allows third
6 parties to access customer usage data. Currently, SMT has adopted a non-standard
7 version of the Download My Data. But as explained further below, Customers are not
8 using this feature because Customers have little interest in data; Customers want the
9 products and services that third parties can offer if the third parties can efficiently assess
10 data. Third parties are not using Download My Data since it is a non-standard API that
11 would require costly development of interfaces by each supplier. Green Button **Connect**
12 My Data is the solution to both these problems. **Connect** My Data is efficient because it
13 utilizes an industry standard API. **Connect** My Data works because it seamlessly and
14 securely allows access by third party providers who can actually put the data to use for
15 the customer.

16 **Q. WHY DO CHANGES NEED TO BE MADE TO SMT?**

17 A. As of 2016, only a little more than a 1% of residential Customers had created
18 SMT accounts and only around 0.25% of Customers had active data-sharing agreements.⁷
19 This very low participation rate makes it clear that SMT is not currently providing the

⁶ See *id.* (citing <http://www.businesswire.com/news/home/20150312005318/en/Global-Smart-Grid-Market-Reach-US118.1-Billion>).

⁷ “Only slightly greater than one percent of residential Customers served by SMT have created an account as of December 2016.” SMT Update to Advanced Metering Working Group (December 2016). “As reported at the Advanced Metering Working Group in Aug[ust] 2016, there were only 1735 active data-sharing agreements in SMT at that time, in a universe of over 7 million meters – a mere fraction of the potential associated with the policy direction and market opportunity for CSP access.” See Robert King and Rob Beville, *Improving Access to Smart Meter Data in Texas* at 7.

1 simple, seamless experience that modern Customers have come to expect. Since
2 Customers are not using SMT, enormous amounts of energy-efficiency savings are going
3 unrealized. Until the process is improved, Texas will not fully realize the potential
4 benefits of its significant investment in advanced metering.

5 What is the simple, seamless experience that modern Customers expect? By
6 analogy, consider a person who wants to buy a TV on credit at Walmart. The lender
7 needs the person's credit information in order to provide financing. The buyer can
8 authorize the credit check and obtain financing from the Walmart check-out line. This is
9 an efficient means by which a person can securely share her data in order to obtain a
10 product she wants. In this example, the buyer is willing to share data because she wants
11 the products and services that the data allows her to get. Notably, the buyer does not
12 want or need to see her detailed credit data; she simply wants the TV. Similarly, in the
13 energy case, a Customer does not want to download usage data; she simply wants the
14 energy products and services that third parties could provide using that data. Energy
15 efficiency, energy storage, solar, demand response, load shaping, customized pricing and
16 usage optimization are all potential advantages a Customer can obtain by sharing data
17 with her REP and/or third parties. However, in order to enable such services, we must
18 empower and enable the Customer to seamlessly transact with third party providers, just
19 as she might currently interact with a TV retailer or lender.

20 **IV. ENGIE'S PROPOSED REVISIONS**

21 **Q. WHAT CHANGES DOES ENGIE SUGGEST BE MADE TO SMT?**

22 A. **Customer Registration.** First, customer registration and account creation creates
23 an unnecessary burden on the Customer. Customers are telling us that they do not want

1 and do not need an SMT account. We should listen. Only third party providers need to
2 register and create an SMT account. The requirement that Customers register on SMT
3 and create an account should be deleted.⁸

4 **Customer Authorization.** Second, the Customer authorization process used to
5 authorize third party access to SMT data similarly creates an unnecessary burden that the
6 Customer have, to date, refused to accept. Specifically, the “Energy Data Agreement”
7 and “Account Authorization Code” process used by SMT are overly complex. Again, the
8 complete absence of Customer engagement in this process speaks loudly and we should
9 listen. This process should be replaced by the same Customer consent process that is
10 much simpler, a point that has been advocated before the Commission on many other
11 occasions. I would suggest the process that has been historically used by the CenterPoint
12 Energy “CRIP” Portal be used here. The CRIP Portal provides two methods to establish
13 customer consent: (i) the third party can check an online box which represents and
14 warrants that the third party has obtained Customer consent or (ii) the third party can
15 attach a standard form letter of authorization (“LOA”) from the customer. As an
16 alternative to the above, if advanced metering data were provided by the existing CRIP
17 Portal using the existing CRIP processes, the SMT interface could simply be eliminated
18 and replaced by the CRIP portal altogether.

19 **Green Button – Connect My Data.** Third and finally, a recognized, standard API
20 is needed to efficiently share data with third parties. This will avoid costly development

⁸ This is a point that has been raised by other market participants before. See Mission:data Comments in Project No. 46204 at 4; TAEBA Comments in Project No. 46204 at 3, 5-6.

1 of custom made applications. Green Button Connect My Data is that standard. SMT
2 should adopt Green Button Connect My Data as its standard API.⁹

3 Some revisions to the SMT Business Requirements that may help effect these
4 suggested changes are identified in the attached Exhibit B. We expect that additional
5 specific changes to achieve the goals laid out here may be identified as this process
6 continues, and we reserve the right to adopt or support additional revisions suggested by
7 other parties as well.

8 **Q. HOW WILL THESE CHANGES IMPROVE SMT?**

9 A. History in Texas has shown that Customers do not want to review raw data; they
10 want the energy products and services that third parties would be able to provide to them
11 if they have access to such data. The above changes will empower third parties to use
12 advanced metering data in a means that will make such data usable for Customers.

13 In today's world, Customer data is used all the time to tailor one's interactions –
14 grocery stores use past buying history to provide coupons a person might want; hardware
15 stores keep preferred products on file for future replacement; media platforms suggest
16 films or shows a customer might want to see based on what they have watched before;
17 car dealerships remind clients when they may be due for an oil change based upon the
18 time they last purchased one; music-streaming sites create unique "stations" for clients
19 based on past activity. Across all these industries, providers are able to provide tailored
20 experiences because they have access to their clients' usage data.

21 In the energy industry, Customer data has the potential to enable energy savings
22 and actually *save* Customers and society money. Yet SMT's registration and

⁹ This suggestion has also been raised in previous Commission proceedings. See TAEBA Comments in Project No. 46204 at 3, 7-8; SPEER Comments in Project No. 46204 at 7; Mission:data comments in Project No. 46204 at 3, 6.

1 authorization processes are currently thwarting this potential because they are so
2 complicated that virtually no Customers are going through it. It does not need to be this
3 way. As explained in the Walmart TV example above, customers do not want their raw
4 data, they simply want the product(s). A less onerous and more provider-led process,
5 such as the changes advocated by ENGIE above, would greatly increase participation in
6 SMT, allowing Texas to realize the full benefits of its significant investment in advanced
7 metering.

8 **Q. ARE THERE ANY POLICY CONCERNS THAT SHOULD BE KEPT IN**
9 **MIND AS REVISIONS TO SMT ARE CONSIDERED?**

10 A. I am aware that some have raised privacy concerns regarding customer data in the
11 past. However, the Texas Commission's rules require a balance between "secure" and
12 "convenient" data access.¹⁰ The lack of Customer participation with SMT so far clearly
13 demonstrates that "the current process for sharing smart meter data does not meet today's
14 customer requirements for convenience."¹¹ Moreover, the data SMT collects relates to
15 electricity consumption, and thus is not as sensitive as medical or financial information
16 that might be at issue in other industries. In addition, there are a variety of rules and laws
17 already in place protecting customer privacy.¹² Also, the Green Button Alliance will start
18 certifying the "Connect My Data" standard by the beginning of next year. This will
19 further ensure that third parties using Connect My Data have achieved a certain threshold
20 of competency by meeting the certification requirement.

¹⁰ P.U.C. Subst. R. 25.130(j)(1).

¹¹ See Robert King and Rob Beville, *Improving Access to Smart Meter Data in Texas* at 7.

¹² See Michael Murray and Jim Hawley, *Got Data? The Value of Energy Data Access to Consumers* at 21 (January 2016), available at <http://static1.squarespace.com/static/52d5c817e4b062861277ea97/t/56b2ba9e356fb0b4c8559b7d/1454553838241/Got+Data+-+value+of+energy+data+access+to+consumers.pdf>.

1 For these reasons, ENGIE believes that while privacy concerns of course should
2 be kept in mind, such concerns do not prohibit meaningful improvements to SMT. The
3 changes ENGIE proposes would not increase security risks, but would make access far
4 more convenient, in keeping with the Texas rules.

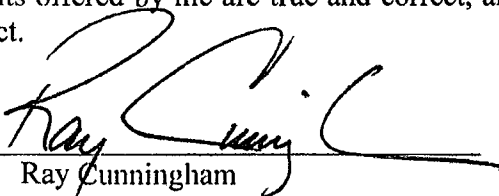
5 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

6 A. Yes, but I reserve the right to address any further issues in supplemental or
7 rebuttal testimony as appropriate.

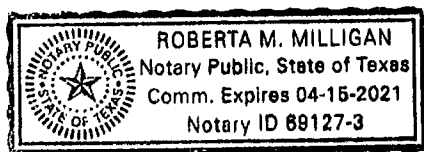
STATE OF TEXAS §
 §
COUNTY OF HARRIS §

BEFORE ME, the undersigned authority, on this day personally appeared Ray Cunningham, who, having been placed under oath by me, did depose as follows:

My name is Ray Cunningham. I am of legal age and a resident of the State of Texas. The foregoing direct testimony and the attached exhibits offered by me are true and correct, and the opinions stated therein are accurate, true and correct.


Ray Cunningham

SUBSCRIBED AND SWORN TO BEFORE ME by the said Ray Cunningham this 19th day of October, 2017.




Notary Public, State of Texas

T. Ray Cunningham, Jr.

Professional Experience

GDF SUEZ Energy Resources NA, Inc.

2012 – Present; Vice President & Assistant General Counsel

- Manage legal and administrative staff for the retail business unit.
- Negotiate retail electricity sales contracts with large C&I customers
- Provide legal support to expand business into residential and solar sectors
- Manage/support M&A activities for the retail business unit, including performing legal due diligence of target company data room, negotiation of purchase and sale agreements, and regulatory compliance.
- Provide legal support, drafting and negotiation of various agreements including demand response, intellectual property, joint marketing arrangements, broker contracts, and settlement agreements
- Manage regulatory/compliance issues in all states affecting the retail business unit
- Manage litigation involving employment and collection issues

GDF SUEZ Energy Marketing NA, Inc.

2008 – 2012; Vice President & Assistant General Counsel

- Manage legal and administrative staff for trading and marketing business unit.
- Negotiate ISDA, NAESB, and EEI trading agreements for natural gas, electricity and coal
- Negotiate supporting documents including novation agreements, credit support and margining agreements, and guarantees.
- Work with Credit Dept to develop new standards for credit rating, collateral threshold, cross default, and renegotiate trading agreements to incorporate new standards.
- Provide legal support for structured transactions including (i) negotiation of a power purchase agreement credit support agreement for a large Canadian wind project, and (ii) negotiation of various tolling agreements and transmission upgrades for several power plants.
- Manage GDF merger issues with trading partners to ensure 'business as usual' transactions were maintained with SEMNA counterparties.
- Advise and develop compliance programs regarding FERC, CFTC and Dodd-Frank matters.
- Successfully resolved US Customs alleged violations regarding Canadian gas imports.

SUEZ Energy North America, Inc.

2004 – 2008; Sr. Counsel

- Managed various M&A activities including (i) successful negotiation of a negotiation of purchase and sale agreement for the acquisition of a Texas power plant (ii) negotiation of title policy insuring good title to the plant electrical generation machinery, and (iii) detailed review of water rights, phase I environmental report, easements/survey, and title commitment documents.
- Managed various business development activities including (i) drafting of various gas sales agreements and MOUs for an LNG import terminal, (ii) drafting a Bahamas land option agreement, and (iii) analysis of various tax optimization structures.
- Successfully managed and concluded two private antitrust lawsuits.
- Settled SENA and SEMNA claims arising from the Enron bankruptcy.
- Settled a sales & use tax dispute arising from the construction of a gas fired power plant in Washington (and settled ancillary legal malpractice claim).
- Successfully litigated two claims involving a property tax dispute and \$1.5M of reactive power compensation owed by BPA
- Successfully concluded California/APX refund matter with no SEMNA liability.
- Worked with Gov't Affairs to favorably influence legislative and regulatory issues affecting the wholesale power and gas markets in Texas and Louisiana.

- Developed trading guidelines to comply with market power rules in Texas and provided training to all trading personnel.
- Obtained Market Based Rate authority for two new combined cycle gas plants.
- Manage FPA 203 merger approval matters.

ExxonMobil Gas & Power Marketing

1998 – 2004; Supply Manager

- Responsible for developing and implementing ExxonMobil strategies for competitive electricity transactions in the ERCOT market.
- Successfully created, executed and managed wholesale and retail electricity supply and sales contracts for all Exxon industrial and commercial sites with a total value in excess of \$100M/yr.
- Developed and managed ExxonMobil's wholesale electricity trading activities within ERCOT.
- Successfully negotiated the settlement of a \$1M contract dispute with a former power supplier.
- Represented ExxonMobil positions in PUCT cases and the ERCOT ADR process.
- Served as Chairman of the Texas Industrial Electricity Consumers trade association during 2002 and 2003.

Law Offices of Daniel C. Conley P.C. / Harris County Attorney's Office

1992 – 1997; Attorney

- Responsible for all aspects of civil and commercial litigation including legal research, discovery, motion practice, and depositions.
- Civil litigation experience includes employment law, worker's compensation, insurance, consumer law, personal injury and medical malpractice.
- Successfully negotiated a six-figure settlement in a case involving a dispute between various beneficiaries of a life insurance policy.
- Commercial litigation experience involves tax suits, contracts, shareholding disputes, and closely held businesses.
- Additional responsibilities also included transactional and real estate practice in the areas of contracts, indemnity agreements, releases, foreclosures and evictions.
- Assisted Harris County in the prosecution of civil actions involving hazardous waste disposal and air emissions, specifically the illegal dumping of spent solvents and the construction of an unpermitted industrial waste-processing facility.

Amoco Chemical Company

1986 – 1992; Engineer, Technical Supervisor, Operations Supervisor

- Provided daily technical support and troubleshooting for several large industrial process units.
- Developed ideas leading to improved product quality, safety, increased production and reduced costs.
- Responsible for coordination of environmental issues (i.e. air permitting and negotiation with regulatory agencies).
- Supervised a group of engineers and operators in day-to-day process operations.
- Provided project management for a large plant expansion and for the design, procurement, and construction of a \$50M project to comply with new environmental regulations.

Education & Licenses

South Texas College of Law, Doctor of Jurisprudence 1992, top 20%

- attended law school while working as full time engineer and supporting growing family

Texas Tech University, BS Chemical Engineering 1986, Cum Laude

State Bar of Texas – licensed 5/93

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|--|
| | | <u>Account Management Requirements</u> <i>These requirements should only apply to third parties. Customers should not be required to create an account. All references to “user” herein refer solely to 3rd parties (i.e. Retail Electricity Providers and Competitive Services Providers).</i> |
| 1 | BR- 017.001 | Ability to request a temporary password when the original password is corrupt, forgotten, etc. |
| 2 | BR- 017.004 | <p>Ability for the TDSP (or Host) to administer (e.g., grant, revoke or suspend, etc.) a user’s ID and password for access to the SMT web portal, in accordance with the business rules. The rights can be administered at the user level, group of users.</p> <p>Includes the ability to reset a user’s password, by emailing a temporary one-time password to the email address the user ID is registered to.</p> <p>Includes the ability to reverse a suspended user ID only at the TDSP discretion.</p> <p>Includes the ability to revoke the registration of a user ID or group of user IDs. This is non-reversible revocation. Includes the ability to maintain an audit trail of who is completing the administration action.</p> |
| 3 | BR- 017.009 | <p>Ability for a user to restore their access when their user ID and / or password have been forgotten.</p> <p>Note:</p> <ul style="list-style-type: none"> • The password reset will be initiated only after answering one or more security questions. • For a forgotten user ID: User will enter the email address they registered with and if there is a match, their user ID will be emailed to this email address. <ul style="list-style-type: none"> <input type="checkbox"/> If multiple user ID’s are associated with an email address, all user ID’s will be sent to the email address. |
| 4 | BR- 017.014 | Ability for a user to reset their password. |
| 5 | BR- 021.001 | Ability for a customer to select and retain a language preference as part of their profile. Not required for 3rd party. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| | | |
|---|-------------|--|
| 6 | BR- 021.002 | Ability for a customer user to change a language preference as part of their profile. <u>Not required for 3rd party.</u> |
|---|-------------|--|

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| 7 | BR- 028.002 | Ability to authenticate the initial <u>User REP</u> Administrator, who is requesting access to the web portal data, actually represents the <u>UserREP</u> . |
| 8 | BR- 028.003 | Ability to authenticate that the initial ERCOT Administrator who is requesting access to the web portal data actually represents ERCOT. Note: This does not require ERCOT to register on the SMT web portal and use this access although it will be available for them to have this access. ERCOT does not believe the PUCT rule requires this access for ERCOT |
| 9 | BR- 028.005 | Ability to authenticate the initial TDSP Administrator, who is requesting access to the web portal data, actually represents the TDSP. |
| 10 | BR- 028.013 | Ability for an administrator to display the company related profile information of other administrators and users in their organizational entity and update select profile attributes: <ul style="list-style-type: none"> • User permissions • Company Name (in drop down list) • Company Address |
| 11 | BR- 028.014 | Ability for an administrator to grant, suspend or revoke access for users and other administrators in their organizational entity. |
| 12 | BR- 028.015 | Ability for an individual user to display and update user specific profile attributes. Includes the ability for the SMT web portal to provide an email notification to the user that the profile has been updated. |
| 13 | BR- 028.016 | Ability for each administrator within each organizational entity, other than the TDSP administrators, to have the same access and capability (e.g. no super administrators). |
| 14 | BR- 028.020 | Ability for an initial user registration to send a notification to the administrator for approval of the user to access |

17

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|--|
| | | the SMT web portal. |
| 15 | BR- 028.021 | Ability for an administrator to accept or reject the user request to register. |
| 16 | BR- 028.022 | Ability for an administrator to view all permissions associated with user IDs in their organizational entity |
| 17 | BR- 031.012 | Ability for each <u>User REP</u> of Record administrator user account to be associated with multiple DUNS and for the TDSP to validate that the DUNS match the <u>User REP</u> . |
| 18 | BR- 037 | Ability to automatically log off users after 15 minutes of inactivity. |
| | | <u>Ad-hoc Data Query Requirements All references to “user” herein refer solely to 3rd parties (i.e. Retail Electricity Providers and Competitive Services Providers).</u> |
| 19 | BR- 005.001 | Ability for the user to download / export <u>via Green Button Connect My Data API.</u> (including using an API interface) the meter and premise attribute information in a standardized format. |
| 20 | BR- 024.011 | Ability to stage the processing order of ad-hoc batch requests based on criteria. |
| 21 | BR- 024 | Ability for authorized users of the SMT web portal to initiate an ad-hoc request for retrieval of up to all of their ESIID usage data (e.g. machine to machine, API, web service, batch system access, etc.) <ul style="list-style-type: none"> Users Include: <ul style="list-style-type: none"> <input type="checkbox"/> REPs <input type="checkbox"/> Customer <input type="checkbox"/> 3rd party |
| 22 | BR- 079 | Ability to make available “on demand” extracts, via <u>Green Button Connect My Data an API</u> , of usage information for any or all of the ESIIDs that a 3 rd party REP or CSP has access through a Letter of Authorization (LOA). <u>For clarity, the “LOA” should be the same LOA template and process that is used in the Centerpoint CRIP portal .. the “LOA” is not the current Energy Data Agreement and Account Authorization Code process currently used by SMT.</u> |
| 23 | BR- 300 | Ability for 3 rd Party users to request and receive up to all of their ESIID usage data in one API request. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| | | |
|----|-------------|--|
| 24 | BR- 001.003 | Ability for the authorized user to export viewable data to a commonly accepted standard format (e.g. Excel).Note: the common format will be a CSV file <u>(not required, but ok to have so long this Excel or CSV file is in addition to the Green Button Connect My Data xml format).</u> |
|----|-------------|--|

Smart Meter Texas Business Requirements
Final – Project Record Version
November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| 25 | BR- 024.002 | Ability for an authorized user to submit data queries through a programmatic interface for XX ESIIDs in support of ad hoc batch requests. |
| 26 | BR- 024.003 | Ability for an authorized user to submit data queries through a programmatic interface for XX ESIIDs in support of online interface requests. |
| 27 | BR- 024.004 | Ability for the SMT web portal to send the authorized user results to batch queries in X time. |
| 28 | BR- 024.005 | Ability for the SMT web portal to send an authorized user results to online queries in X time. |
| 29 | BR- 024.006 | Ability to request usage information for a specific date range and specific usage data interval, for which the meter is configured, for an ESIID, up to a maximum of 4 years. |
| 30 | BR- 024.007 | Ability to notify requestor of exceptions to queries and reason for exceptions including negative reports indicating no data was available for the parameters specified. |
| 31 | BR- 024.008 | Ability to send, in response to an ad-hoc batch query, the usage values, and associated date and time of each interval. |
| 32 | BR- 024.010 | Ability for the SMT web portal to acknowledge to the requestor receipt of the request for data retrieval. |
| 33 | BR- 029.001 | Ability to use a secure data transport methodology for the machine to machine interface. |
| 34 | BR- 029.002 | Ability for an authorized user to send batch queries through a machine to machine interface for XX ESIIDs. |
| 35 | BR- 029.003 | Ability to receive responses to batch queries in X time. |
| 36 | BR- 029.006 | Ability for the SMT web portal to acknowledge to the requestor receipt of the of the request for data retrieval |
| | | <u>Customer Data Management Requirements [Customers don't need or want to review usage data. Suggest this feature be deleted. Customers should not bear the cost to enhance or maintain this unwanted feature]</u> |

Smart Meter Texas Business Requirements

Final – Project Record Version November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| 37 | BR- 001 | Ability to view 15 minute interval usage data, the daily meter reading, and the interval time stamp, up to a maximum of 13 months. The units will be recorded in kwh with 3 significant digits to the right of the decimal. Note: REP of Record and TDSPs will have access to 48 months |
| 38 | BR- 001.004 | Ability to view information for one ESIID at a time. |
| 39 | BR- 001.005 | Ability to change viewable parameters (e.g. select the time period to be displayed, ESIID). |
| 40 | BR- 001.006 | Ability to retrieve and export usage information for multiple ESIIDs at a time. |
| 41 | BR- 001.007 | Ability to display the usage data in graphical format based on a standard design for all TDSPs. |
| 42 | BR- 001.009 | Ability to print the viewable usage data. |
| 43 | BR- 001.010 | Ability to print the viewable usage data graph. |
| 44 | BR- 004 | Ability for the authorized user to view and export up to the most recent 24 months of ESIID / meter monthly AMS billed usage data for user selected dates. Note: This requirement is intended to allow the user to see usage data relevant to a billed cycle(s). This duplicates the LOA process for the AMS meters. |
| 45 | BR- 004.001 | Ability for the Customer to view and export the AMS historical usage data specific to the Customer and their current premise. |
| 46 | BR- 004.002 | Ability to view monthly billed AMS KWH usage information for one ESIID at a time. |
| 47 | BR- 004.003 | Ability to change viewable parameters for monthly billed KWH usage data (e.g. select the time period to be displayed, ESIID). |

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|--|
| 48 | BR- 004.004 | Ability to retrieve and export monthly billed KWH usage data for multiple ESIIDs at a time. |
| 49 | BR- 004.006 | Ability to print the viewable monthly billed KWH usage data. |
| 50 | BR- 004.008 | Ability to print the viewable monthly billed KWH usage graph. |
| 51 | BR- 005 | Ability for users to retrieve and display meter and premise attribute information. |
| 52 | BR- 005.002 | <p>Ability to display / export / download (including using an API interface) meter attribute information:</p> <p>Note: Based on the user role, some fields may be hidden on the screen</p> <ul style="list-style-type: none"> • Meter serial number • Meter multiplier • Total number of channels the meter has (not necessarily used) • Meter Manufacturer name • Last meter test date • Phases • Meter class (ampacity) • Date Meter was Installed • Initial Provision Date (date the meter becomes part of the AMS system) • Communication indicator (e.g. RF meter, power line carrier, etc.) • Instrument Rated (e.g. Current Transformer / Potential Transformer) <ul style="list-style-type: none"> • Ratio of Current Transformers and Potential Transformers • ESI Firmware version • HAN Protocol (ZigBee or HomePlug) • Meter configuration (which capabilities are enabled and how) <ul style="list-style-type: none"> • Interval setting (how often the meter is recording usage) • KWH <ul style="list-style-type: none"> • In flow / Out flow (DG) – both will be displayed as positive numbers |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| | | <p>° Will need to identify the DG channel</p> <p><input type="checkbox"/> KW</p> <p><input type="checkbox"/> KVA</p> <p><input type="checkbox"/> Remote disconnect / connect</p> <p>Note:</p> <ul style="list-style-type: none"> These are only meter attributes and may not be how the meter is currently physically working For a waived meter (a meter that has been waived of meeting all requirements of PUCT §25.130(g)) consider putting a "W" in the meter attribute field Some meter attributes are publicly available |
| 53 | BR- 005.003 | <p>Ability to display / export / download (including using an API interface) premise information:</p> <ul style="list-style-type: none"> Premise address (service address – house number, street name, city, state, zip) ESIID Meter number Service Voltage (primary / secondary / transmission) Meter Status – energized / de-energized Premise Status – Active / inactive Premise Time zone TDSP Rate Code <p>Note:</p> <ul style="list-style-type: none"> For a waived meter (a meter that has been waived of meeting all requirements of PUCT §25.130(g)) consider putting a "W" in the meter attribute field Some premise attributes are publicly available |
| 54 | BR- 005.004 | <p>Ability to view / export / download, including using an API interface, Meter capability information. (what a meter can do, but may not be doing) (e.g. disconnect / reconnect).</p> |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| | | Note: Meters that are installed are likely to have different capabilities |
| 55 | BR- 008 | <p>Ability to view, print, download / extract the usage data for a given period of time based on a supplied date to see all of the updates that have occurred to the data.</p> <p>Note: If there are no updates to the usage data for the specified date and time parameter, a negative report will be returned indicating no information has been retrieved.</p> |
| 56 | BR- 019.009 | Ability for the customer to view who is authorized for read only access to their data, at both the customer and the ESIID-level. |
| 57 | BR- 048 | <p>Ability to view and retrieve date / time implementation information (current date and time stamp for firmware revision number and 1 prior date and time stamp for firmware revision number) associated with meter and premise attributes updates:</p> <ul style="list-style-type: none"> ▪ Current Firmware revision number ▪ Inflow / Outflow (distributed generation) ▪ Which HAN communication protocol is enabled ▪ Meter status (connected / disconnected) ▪ Premise status (energized / de-energized) |
| | | Data Repository Requirements |
| 58 | BR- 001.001 | <p>Ability to populate the SMT web portal with the daily VEE 15 minute interval usage and the meter register reading ending at 23:59:59, no later than 23:59:59 of the calendar day after the usage data is recorded (for meters provisioned in the AMS system).</p> <p>Note: The TDSPs will make their best effort to provide this data as early as possible. The market would like to have this data by noon on the calendar day after the data is recorded.</p> |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|--|
| 59 | BR- 001.002 | <p>Ability to distinguish missing data from an actual zero value for a read, so that the REPs will know that there is a communication issue or power outage, rather than the read being skipped or inadvertently missed.</p> <p>Note: This only applies for the time period the AMS meter was there.</p> <p>Note: the VEE process does not typically produce a null value, however there may be some points in time in which a null value may be transmitted.</p> |
| 60 | BR- 001.011 | Ability to report usage values in kwh with 3 significant digits to the right of the decimal (mathematically 0.000 means zero). |
| 61 | BR- 009 | Ability for the TDSP to revise historical AMS usage data and store the date / time stamp of the revision. |
| 62 | BR- 009.001 | Ability to indicate whether the 15-minute interval usage data is an actual value or an estimate. |
| 63 | BR- 078 | <p>Ability to maintain a maximum of 13 months of usage data from AMS meters online (accessible via the SMT web portal), and a total of 4 years of usage data accessible via API to REPs in order to conform to ERCOT Protocol Section 17.2.5 (and NODAL 17.3.5) and offline (accessible via a batch process) for 3 more years, for a total of 7 years).</p> <p>Note: All usage data will be available for 4 years online for the REP of record as well as via the API. Customers will be able to access 13 months.</p> <p>Depending on the amount of data being requested, the report may run in the background and the status will be returned to the UI with a link to the FTP site.</p> |
| | | <u>ESIID Set Up Requirements [These requirements assume Customer registration and account creation on SMT. Customer registration on SMT should not be a requirement, and these requirements should be deleted.]</u> |
| 64 | BR- 043 | Ability for a Customer to associate one or more ESIIDs with one Customer's logon user id and password. |

25

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| 65 | BR- 043.007 | Ability for the SMT web portal to validate the list of ESIIDs and send a real time error message for each ESIID that failed validation. |
| 66 | BR- 043.009 | Ability to prevent an ESIID from being assigned to more than one Customer user ID. Note: This does not preclude the customer from allowing read only access to their data through the Friend user access functionality and the 3 rd Party functionality. |
| 67 | BR- 017.018 | Ability to actively accept a terms of use disclosure on initial registration and when selecting a new ESIID. |
| 68 | BR- 043.001 | Ability for the Customer to upload a list of ESIIDs (one or more) and associated meter numbers to become associated with one user ID and password. Note: May include the ability for the consumer to browse their computer/network to locate the text file from browse button on the SMT web portal |
| 69 | BR- 043.002 | Ability for the Customer to manually input one or more ESIIDs. |
| 70 | BR- 043.008 | Ability for the customer to delete an ESIID associated with their account. |
| | | Event Management Requirements |
| 71 | BR- 033.003 | Ability to provide, to all users, an announcement on the SMT web portal that the web portal is not available, during down times. Note: This is different than the standard internet message that the URL cannot be accessed. |
| 72 | BR- 070.002 | Ability for the SMT web portal host owner to post a notification on the web portal home page regarding web portal outages, maintenance periods, etc. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| | | <u>Friends & Family Functionality Requirements</u> <i>Neither the Customer nor his/her Friends want to review usage data. Only 3rd parties (i.e. REPs & CSPs) need to review usage data. Thus delete this unnecessary feature.</i> |
| 73 | BR- 043.003 | Ability for a residential customer to grant, modify, or remove up to 5 Friend users (per User ID) access to view usage data for the customer's ESIID(s). Note: this is not assigning the ESIID to the Friend users. |
| | | <u>FTPS Requirements</u> |
| 74 | BR- 049 | Ability for the SMT Host to make available, on an FTP site, daily extracts of usage information added to the common data repository since the last extract for all usage data of the REP of Record's ESIIDs. Note: This will reduce the traffic on the common data repository |
| 75 | BR- 049.002 | Ability for the SMT Host to retain the extract for 10 calendar days and then purge the extract. |
| | | <u>General Solution Requirements</u> <i>[These requirements assume Customer registration and account creation on SMT. Customer registration on SMT is not necessary, and these requirements should be deleted.]</i> |
| 76 | BR- 021 | Ability to provide any information displayed for the Customer in English or Spanish. Note: Spanish support is for residential customers only |
| 77 | BR- 021.003 | Ability to provide customer education on the portal in English or Spanish and display based on the language preference in the profile. |
| 78 | BR- 021.005 | Ability to have English be the default language upon initial login. |
| 79 | BR- 028.006 | Ability to use a secure internet protocol (e.g. HTTPS, etc.) for all functions on the SMT web portal. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| | | |
|----|---------|--|
| 80 | BR- 033 | Ability to have 24x7x365 access to the SMT web portal. |
|----|---------|--|

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | REQUIREMENT |
|--------|-------------|---|
| | | Note: There will be predetermined agreed upon maintenance windows or down times when full access to the portal may not be available. These may change over time. |
| 81 | BR- 036 | Ability to provide ADA compliant Customer web portal user interfaces. |
| 82 | BR- 036.001 | Ability to conform to the ADA section 508 accessibility standard. Note: Utilize WCAG 2.0 |
| 83 | BR- 062 | Ability to navigate to all pre-determined user interfaces through a central location (i.e., home page). |
| 84 | BR- 070 | Ability to have web portal host owner functionality. |
| | | Green Button Requirements |
| 85 | BR- 306 | Ability for 3 rd parties to use Green Button <u>Connect My Data</u> functionality to access customer data. (e.g. Open ADE, Open ESPI, etc.) |

| Number | ID | Requirement |
|--------|-------------|--|
| | | HAN Functionality Requirements – Device Status |
| 86 | BR- 006.016 | Ability to immediately notify the authorized user if a previously provisioned HAN device becomes disconnected (i.e. unpaired) from the meter. |
| 87 | BR- 006.017 | Ability to for an authorized user to immediately determine if there is a communication error on the meter for one ESIIID at a time (i.e. affecting HAN device communication) |

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|--------------|---|
| | | Note: via machine to machine interface and GUI |
| 88 | BR- 006.018 | Ability to notify an authorized user if there is a communication error on the meter for all ESIID's at the time that the error occurs (i.e. affecting HAN device communication) |
| 89 | BR- 006.020 | Ability for an authorized user to view a current status of a paired HAN device on SMT as the device becomes inactive. Note: via machine to machine interface and GUI |
| 90 | BR- 006.014b | Ability for an authorized user to immediately determine whether a previously provisioned HAN device is still connected (i.e. paired) to the meter for one ESIID at a time. Note: via machine to machine interface and GUI |
| 91 | BR- 006.015b | Ability for an authorized user to immediately determine whether a previously provisioned HAN device is still connected (i.e. paired) to the meter for more than one ESIID at a time. Note: via machine to machine interface and GUI |
| 92 | BR- 006.019 | Ability for an authorized user to immediately determine the near real time status of the meter (e.g. device added, meter ready, etc.) Note: via machine to machine interface and GUI |
| 93 | BR- 068.002 | Ability to update the list of Provisioned HAN Devices, in the SMT web portal, after the successful Provisioning of a HAN Device with an ESI. Note: The market desires this to occur in under 1 minute, in order to support a good customer experience. This |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| | | will be defined by SLAs. |
| 94 | BR- 068.005 | Ability to display on the SMT web portal a free-form text label identifying a Provisioned HAN Device. |
| 95 | BR- 081.002 | <p>Ability to update the list of Provisioned HAN Devices and pending Provision requests by removing the De- Provisioned HAN Device or deleting the request to Provision from the list, after the successful De-Provisioning of a HAN Device or after the successful deletion of the pending Provision request.</p> <p>Note: The market desires this to occur in under 1 minute, in order to support a good customer experience. This will be defined by SLAs.</p> |
| | | HAN Functionality Requirements – ESIID Groups |
| 96 | BR- 025.006 | Ability for an authorized user to create ESIID groups for sending messages to Provisioned HAN Devices through the SMT web portal or an API. |
| | | HAN Functionality Requirements – De-Provision |
| 97 | BR- 081.003 | <p>Ability for an authorized user to select a Provisioned HAN Device or pending Provision request, from a list displayed on the SMT web portal, for purposes of De-Provisioning a Provisioned HAN Device or deleting the pending Provision request.</p> <p>Note:</p> <ul style="list-style-type: none"> • Only TDSPs can delete a pending Provision request • 3rd Parties and customers can select a device to de-provision through GUI |
| 98 | BR- 400 | Ability for an authorized user to extract and report on reasons and source for why a device(s) was de-provisioned based on defined roles. |

31

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| 99 | BR- 084 | Ability to display a notice that the TDSP has de-provisioned a HAN device based on defined reason codes. |
| 100 | BR- 081 | Ability for an authorized user to send a request to De-Provision a HAN Device or delete a pending provision request through the SMT web portal. |
| 101 | BR- 081.004 | Ability to time-date stamp a request and identify and log which authorized user requested to De-Provision a HAN Device when the request is received by the SMT web portal. |
| | | <i>HAN Functionality Requirements - General</i> |
| 102 | BR- 080 | Ability to uniquely identify an ESI with only the meter number and ESIID |
| 103 | BR- 025 | Ability for the SMT web portal to facilitate communication to and from Provisioned HAN Devices over the AMS network. |
| | | <i>HAN Functionality Requirements - Messaging</i> |
| 104 | BR- 053 | Ability for an authorized user to assign a priority to a message sent through the common web portal to the HAN devices (i.e., demand response events and price signals should have a high priority and should be sent immediately, etc.). Note: The structure for selecting and applying priorities to messages is there, but SMT is not programmed to recognize or act on the priority |
| 105 | BR- 053.001 | Ability for an authorized user to assign priorities (High, Medium, and Low) to HAN messages sent to Provisioned HAN Devices Note: This may be accomplished through an API, as well as a User Interface |
| 106 | BR- 053.002 | Ability for High priority messages to be delivered to HAN Devices in near real-time |

32

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|-------------|--|
| 107 | BR- 053.003 | Ability for Medium priority messages to be delivered to HAN Devices in less than 2 hours. |
| 108 | BR- 053.004 | Ability for Low priority messages to be delivered to HAN Devices in less than 24 hours. |
| 109 | BR- 053.005 | Ability for the REP to assign priorities (High and Low) to HAN messages sent from the HAN Device to the Rep of Record (i.e., this is the message acknowledgement). |
| 110 | BR- 053.006 | Ability for High priority messages (e.g. HAN Device provisioning, customer opt-out of demand response, etc.) from Provisioned HAN Devices to be made available to the authorized user in near real-time through the ESI. |
| 111 | BR- 053.007 | Ability for Low priority messages from HAN Devices to be made available to the authorized user each time the AMS meter is read. |
| 112 | BR- 025.007 | Ability to utilize a standardized message size for HAN messages through the portal. Note: This may be required to manage the bandwidth utilization. |
| 113 | BR- 025.008 | Ability to send and receive x volume of HAN messages through the SMT web portal. Note: This may be required to manage the bandwidth utilization. |
| 114 | BR- 025.012 | Ability for authorized users to send messages between the SMT web portal using the AMS network to Provisioned HAN devices, in accordance with message priority, using a standardized API interface. |
| 115 | BR- 064 | Ability for an authorized user to initiate a message on the SMT web portal that will be sent through the AMS network to the ESI. Note: This is available through the API |
| | | HAN Functionality Requirements – Message Status |

33

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|--------------|---|
| 116 | BR- 025.009a | Ability to make available, to an authorized user, the failure status of a message sent to the ESI or that failed to be sent from the ESI to the Provisioned HAN Device (e.g. message not sent, message in queue, message undeliverable, message failed, number of retries, etc.). |
| 117 | BR- 025.009b | Ability to display to an authorized user the status of a message sent to a Provisioned HAN Device (e.g. message not sent, message in queue, message undeliverable, message failed, number of retries, etc.). |
| 118 | BR- 025.004 | Ability for an authorized user to send a message and receive the status of this communication from the SMT web portal to the ESI. Note: Message status report is only available via a user request |
| 119 | BR- 025.005 | Ability for the ESI to report the failure to deliver HAN messages and the AMS network to make available such report to the initiator of the message. Note: Failed messaging status report is only available via a user request |
| | | HAN Functionality Requirements - Permissions |
| 120 | BR- 025.003a | Ability to authenticate that the user sending / receiving messages through the SMT web portal to / from the ESI is authorized to send / receive messages to / from this ESI. |
| 121 | BR- 025.011 | Ability to grant authorized users all or a subset of HAN Device roles and permissions by HAN device at the individual device level. |
| 122 | BR- 401 | Ability for the Customer to grant 3 rd Parties permission to control (provision, de-provision, message) their HAN device(s). |
| 123 | BR- 025.003b | Ability to authenticate that the user sending / receiving messages through the SMT web portal to / from a Provisioned HAN Device type is authorized to send / receive messages to / from this HAN Device type. |

34

Smart Meter Texas Business Requirements

Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|--------------|--|
| 124 | BR- 025.010 | Ability to grant an authorized user the authority to provision / de-provision a specific HAN Device. |
| 125 | BR- 069 | Ability for an Administrator to grant or revoke access to users, within their organizational entity, for HAN permissions (e.g., as an Administrator you can control who within the organization has access to control a HAN Device, etc.) on customer's Provisioned HAN devices. |
| 126 | BR- 085 | Ability for an Admin to display user HAN permissions in their organizational entity |
| | | HAN Functionality Requirements – Provision HAN Device |
| 127 | BR- 068.001 | Ability to uniquely identify a HAN Device for purposes of Provisioning to the ESI with only HAN Device networking details (e.g. MAC Address, Installation codes) |
| 128 | BR- 068.003b | Ability for an authorized user to provision (to the ESI) multiple HAN devices at one or more premises at the same time. Note: A possible solution to provision multiple HAN Devices is using a standard API interface across TDSPs. |
| 129 | BR- 068.009 | Ability for the TDSP to add the meter security information to an authorized user's request to Provision a HAN Device to complete the HAN Device Provisioning process. |
| 130 | BR- 068.010 | Ability to time-date stamp a request to Provision a HAN Device when the request is received by the SMT web portal. |
| 131 | BR- 068 | Ability for an authorized user to Provision a HAN Device through the SMT web portal. Note: Think about different methods of acquiring a device and how to grant access to the device. |
| 132 | BR- 068.003a | Ability for an authorized user to provision (to the ESI) one HAN device at a time through the SMT web portal, or an API. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| 133 | BR- 068.004 | Ability for an authorized user to label a HAN Device in free-form text at the time of the Provisioning request. |
| 134 | BR- 068.006 | Ability to display a notification to an authorized user who is trying to provision a HAN device that all the ESI slots are filled at the time of provisioning request. |
| 135 | BR- 068.007 | Ability for an authorized user to request to Provision a HAN Device, by providing to the TDSP through the common Web Portal the ESIID, meter number and HAN Device networking details (e.g. MAC Address, Installation codes). Note: This may be done through a Web Portal UI or a standard API interface. |
| | | HAN Functionality Requirements – View Devices |
| 136 | BR- 063 | Ability to display to an authorized user how many HAN Devices have been provisioned to the ESI (including the description of each Provisioned HAN Device) and how many pending Provision requests. |
| 137 | BR- 063.001 | Ability to allow an authorized user access to view a list of all Provisioned HAN Devices and pending Provision requests for an ESI. |
| | | Help Functionality Requirements |
| 138 | BR- 021.004 | Ability to provide customer help functions on the SMT web portal in English or Spanish and display based on the language preference in the profile. |
| 139 | BR- 034 | Ability to have online help on the SMT web portal that explains how to use functions of the web portal. |
| 140 | BR- 034.001 | Ability to maintain and display (add, modify) SMT web portal specific FAQs. |
| 141 | BR- 034.002 | Ability to print help material that is displayed on the SMT web portal. |

36

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| 142 | BR- 034.003 | Ability to maintain and display (add, modify) the contact information listed in the help for SMT web portal access and technical help only. |
| 143 | BR- 034.004 | Ability to search for a particular help topic. |
| 144 | BR- 034.005 | Ability to download the help material information. |
| 145 | BR- 034.006 | Ability to link to other outside sources to display help information. |
| 146 | BR- 034.007 | Ability to give the <u>user</u> Customer an on-line list of steps detailing how to create the text file for uploading multiple ESIIDs that are going to be associated with one user account. |
| 147 | BR- 051 | Ability for the REP of Record <u>User (i.e. REP or CSP)</u> to have access to the appropriate Customer screens in English or Spanish. |
| 148 | BR- 051.001 | Ability for the REP of Record to dynamically switch display language (English or Spanish), without it changing the REP user's default profile. |
| 149 | BR- 052 | Ability to have an online demonstration guide. |
| 150 | BR- 054 | Ability for the customers to view, on the SMT web portal, general information and education regarding AMS deployment related to the customer. Note: This could be a link to the TDSP's website for their deployment information |
| 151 | BR- 070.001 | Ability for the SMT web portal host owner to role play across any user type in order to trouble shoot issues associated with questions about what a user is seeing on the web portal. |
| | | <i>Lifecycle Management Requirements</i> |
| 152 | BR- 031.001 | Ability for <u>User</u> REP of record access to all the functions associated with the ESIID to be automatically revoked when |

37

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|-------------|--|
| | | the LOA expires or terminates, or REP is no longer the REP of Record due to a switch or move out. |
| 153 | BR- 044 | Ability to terminate all users access to premise specific information whenever the TDSP is notified a Customer has moved out of a premise, via Texas SET transaction, including any authorization for 3 rd party access and permissions to usage history, HAN control (e.g., the LOAs associated with the user's ESIIDs, Friend user access, primary ESIID assignment, etc.). |
| | | <i>On-Request Poll for Power Status Requirements</i> |
| 154 | BR- 006.003 | Ability to poll for power status (i.e. does the premise have power currently). |
| 155 | BR- 006.014 | Ability for the authorized user to immediately determine whether there is currently power on at the meter for one ESIID at a time. Note: via machine to machine interface and GUI |
| 156 | BR- 006.015 | Ability for the authorized user to immediately obtain the near real time status of the connect/disconnect switch for the meter for one ESIID at a time Note: via machine to machine interface and GUI |
| | | <i>On-Demand Meter Read Requirements</i> |
| 157 | BR- 006.010 | Ability for an authorized user to obtain immediate access to the near real time register read with a date and time stamp of the read for one ESIID at a time. |
| | | <i>Registration Requirements These requirements should only apply to third parties. Customers should not be required to create an account. All references to "user" herein refer solely to 3rd parties (i.e. Retail Electricity Providers and Competitive Services Providers).</i> |
| 158 | BR- 017 | Ability for the user to electronically set up and maintain a user ID and password for accessing appropriate web |

Smart Meter Texas Business Requirements

Final – Project Record Version November, 2013

| Number | ID | Requirement |
|--------|-------------|--|
| | | portal information. |
| 159 | BR- 028.001 | Ability to initially authenticate the <u>User</u> customer who is requesting access to the data. Note: The <u>User</u> customer will be required to provide the ESID, meter number, and <u>LOA</u> REP of Record when they initially register. |
| 160 | BR- 028.011 | Ability to establish up to four administrators per organizational entity (i.e. TDSP, REP, 3 rd Party, Business Customer, Regulatory) |
| 161 | BR- 028.012 | Ability to require the first Administrator who registers for an organizational entity to provide a single, common e- mail address to be used to send messages for notifications (e.g., REP user requesting access to the portal, etc.) Note: This is one outbound communication point that can be updated. |
| 162 | BR- 028.017 | Ability to require each user (admin and non-admin) to have a unique user id for access to the common web portal (e.g. there cannot be 2 smith user ids) |
| 163 | BR- 028.025 | Ability to prevent a customer role from being bundled with any other role other than a customer, under the same User ID Note: Any non-customer user will not be able to perform all customer functions without logging on using their customer- User ID (e.g. modify customer user profile, grant LOA, etc.) • The roles may not be as specific as TDSP Admin, or REP admin, there may be many more than the obvious roles, e.g.: • REP user • REP Admin |

39

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|--------------|---|
| | | <ul style="list-style-type: none"> • REP user and REP Admin • REP of Record and / or 3rd Party access <p>Note: A user that has access to multiple role capabilities will need to accept terms and conditions that cover the various roles</p> |
| 164 | BR- 028.005b | Ability to authenticate any Host user who is requesting access to the data. |
| 165 | BR- 028.019a | Ability for a Host Admin to authenticate a PUCT user who is requesting “read only” access to the web portal. |
| | | <i>Portlet Requirements</i> |
| 166 | BR- 001.008 | Ability to display usage data in portlets for REPs and 3 rd Parties to develop and use, on their own, with their own logo. |
| 167 | BR- 004.005 | Ability to display monthly billed KWH usage data in portlets for REPs and 3 rd Parties to develop and use, on their own, with their own logo. |
| | | <i>Reporting Requirements</i> |
| 170 | BR- 028.008 | Ability for the SMT web portal to provide to the Commission, upon request, a history of who is accessing the portal data. |
| | | <u>Security and Identity Management Requirements. These requirements should only apply to third parties. Customers should not be required to create an account. All references to “user” herein refer solely to 3rd parties (i.e. Retail Electricity Providers and Competitive Services Providers).</u> |
| 171 | BR- 017.010 | Ability to block access to a user and force a password reset, via email, if they enter the incorrect password 4 times within 5 minutes. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| | | |
|-----|-------------|---|
| 172 | BR- 017.011 | Ability to require a user to respond to a confirmation email, sent to the user's e-mail address they are registering with, to validate the email address is correct before allowing them to move forward with the registration process. |
|-----|-------------|---|

Smart Meter Texas Business Requirements
Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| | | (e.g. send and receive a confirmation). |
| 173 | BR- 017.016 | Ability to require a user to change their temporary password after the first log-in with their temporary password. |
| 174 | BR- 061 | Ability to purge any user ID after a period of 13 months of inactivity (i.e., not logged on to the web portal). Includes all user ID types. |
| 175 | BR- 028.024 | Ability to restrict TDSP access only to data associated with the ESIIDs within that TDSPs territory (e.g., meter data, . premise data, usage data) |
| 176 | BR- 031 | Ability to establish and maintain security controls associated with portal access for REP of Record. |
| 177 | BR- 028.010 | Ability to grant and/or block access to certain data based on security level (e.g. Customer role, REP role, Admin role, etc.) |
| 178 | BR- 031.002 | Ability to allow REP of Record access to usage data, meter attributes, and premise information for ESIIDS that are currently served by that REP. |
| 179 | BR- 017.017 | Ability to utilize security (e.g. CAPTCHA) procedures during the user's initial registration. Includes the ability to cancel the registration process to the SMT web portal requiring the user to start the registration process over, after 3 unsuccessful attempts to correctly enter the CAPTCHA. |
| 180 | BR- 028 | Ability to provide appropriate level of security depending on who is accessing the ESIID data on the SMT web portal. |
| 181 | BR- 028.007 | Ability to adhere to best practices as defined by PCI, NERC CIP cyber security standards. |
| 182 | BR- 017.003 | Ability to allow a minimum of at least 6 characters and no more than 24 characters letters and numbers, case sensitive, in the password. |

42

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| | | Additionally, the password cannot be the user name. |
| 183 | BR- 017.007 | Ability to set up and store a user specified password security question and answer. |
| 184 | BR- 017.002 | Ability to allow up to a minimum of 5 and a maximum of 100 alphas / numbers / special characters, except slashes and single and double quotes, in the user ID. |
| | | 3rd Party Functionality Requirements |
| 185 | BR- 019.002 | Ability for the SMT web portal to contain a list of current 3 rd parties who are registered on the web portal |
| 186 | BR- 073 | Ability to purge a 3 rd party after 13 months of inactivity by all of their user id(s) and remove the 3 rd party from associations they have. |
| 187 | BR- 303 | Ability for 3 rd parties to request a report via API of all the ESIIDs they are authorized to view. |
| 188 | BR- 303.001 | Ability for 3 rd parties to search and view a list of the ESIIDs they are authorized to view Ability to include in the report who the associated TDSP is for each ESIID the 3 rd party has access to |
| 189 | BR- 305 | Ability to discontinue 3 rd party API access for any 3 rd party API user who is inactive for 13 months and after notification. |
| 190 | BR- 307 | Ability to view a customer education video about 3 rd party access |
| 191 | BR- 308 | Ability for 3 rd parties to have access to updated API process and procedure documentation |
| 192 | BR- 019.015 | Ability for 3 rd parties and Customers to set up LOAs. |

43

Smart Meter Texas Business Requirements
Final – Project Record Version
November, 2013

| Number | ID | Requirement |
|--------|-------------|---|
| 193 | BR- 019 | Ability for a Customer to electronically authorize release (via an LOA) of usage data to a 3 rd party (i.e. someone other than the REP of Record - either a REP, aggregator, or registered 3 rd party). |
| 194 | BR- 019.008 | Ability for the Customer to actively select a specific expiration date or unlimited access timeframe for 3 rd party access other than the default of 6 months |
| 195 | BR- 019.010 | Ability for the Customer to electronically allow select / revoke which 3 rd parties are authorized for read-only access to their data |
| 196 | BR- 019.012 | Ability for a 3rd party to attest on the SMT web portal that they have a Customer authorization authorizing them to read only access the Customer's data |
| 197 | BR- 019.014 | Ability for 3 rd parties and / or Customers to receive a notification when access has been granted, access has been changed, or access has been revoked for an ESIID |
| 198 | BR- 019.016 | Ability for 3 rd parties to search and view a list of the ESIIDs they are authorized to view |
| 199 | BR- 028.009 | Ability for the SMT web portal to provide to the Commission, upon request, a history for the time period when different 3 rd parties had access to the customer portal data via an API. |
| 200 | BR- 019.001 | Ability for a Customer to allow multiple registered 3 rd parties to have limited time based read only access, with a default expiration of 6 months, to their usage data on the SMT web portal |
| 201 | BR- 309 | Ability for Customer to select the reason they are rejecting a 3rd Party Agreement Delete "Third Party Agreement" and use the LOA process instead. |
| 202 | BR- 310 | Ability for Customers and regulatory officials to view the number and types of usage reports being run on the consumer's usage data. The data elements provided; ESIID, ESIID class, requesting party, date requested, date provided, type of request. Provide data individually and in aggregate with reporting options by ESIID and or date range and or requesting party and or ESIID Class. |

44

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

| Number | ID | Requirement |
|--------|---------|--|
| 203 | BR- 311 | Ability for a 3 rd party to provide Customers a link to their privacy policy. |

Smart Meter Texas Business Requirements

Final – Project Record Version

November, 2013

Appendix A

Smart Meter Texas Business Requirements
Final – Project Record Version
November, 2013

| Number | CR | AMWG Requirement | Implementation Date |
|--------|--------------|--|---------------------|
| 204 | CR- 2013 002 | Ability to provide reports for AMWG data monitoring – data timeliness measurements | Q2 2014 |
| 205 | CR- 2013 005 | Ability to provide reports for AMWG data monitoring – number of SMT help desk tickets monthly by ticket type | Q2 2014 |
| 206 | CR- 2013 006 | Ability to provide reports for AMWG data monitoring – availability of SMT APIs | Q2 2014 |
| 207 | CR- 2013 007 | Ability to provide reports for AMWG data monitoring – availability of SMT FTPS | Q2 2014 |
| 208 | CR- 2013 009 | Ability to provide reports for AMWG data monitoring – number of SMT accounts by type | Q2 2014 |
| 209 | CR- 2013 012 | Ability to bypass redundant SMT GUI screens for Users with only one meter when accessing HAN device information | Q4 2014 |
| 210 | CR- 2013 013 | Ability for a SMT GUI User to be re-directed to a correct “login” page following a session timeout | Q4 2014 |
| 211 | CR- 2013 014 | Ability for an SMT GUI User to toggle between 15-minute reads and Daily reads without having to reset the date range | Q1 2016 |
| 212 | CR- 2013 016 | Ability for an ROR to grant access to vendors, who are performing services on-behalf of the ROR, customer energy usage, HAN messaging, and HAN provisioning via APIs or FTPS files | Q3 2014 |
| 213 | CR- 2013 017 | Ability for an ROR to manually request from SMT their customer(s) historical usage information | Q4 2013 |

Smart Meter Texas Business Requirements
Final – Project Record Version
November, 2013

| Number | CR | AMWG Requirement | Implementation Date |
|--------|--------------|--|---------------------|
| 214 | CR- 2013 017 | Ability for an ROR to subscribe with SMT to automatically receive 12-months of historical customer usage information via FTPS following a customer-initiated market switch | Q2 2014 |
| 215 | CR- 2015 021 | Ability to improve the ROR search criteria during the Customer SMT GUI registration process | Q4 2015 |
| 216 | CR- 2015 022 | Ability to keep the selected ROR visible during the Customer SMT GUI registration process | Q1 2017 |
| 217 | CR- 2015 024 | Ability for the SMT Energy Data Agreement associated with Third Party Access to be renewed by the Customer after one year | Q4 2015 |
| 218 | CR- 2015 031 | Ability to restrict in the SMT GUI validation of a customer's account registration and meter "adds" to the current ROR | Q4 2016 |