

9. EV Charger Transition to Support

Table of Contents

- [Objective of the EV Charger Project](#)
- [FMEA, RACI and Checklist](#)
- [Mainframe Transition to Support](#)
- [Mainframe file exchange with cloud via EDI](#)
- [Cloud Architecture Diagram](#)
- [Cloud Architecture Zone Diagram](#)
- [Data Flow Diagram](#)
- [Cloud Data Model](#)
- [Path to the Code Repository](#)
- [GitHub Branch Information](#)
- [GitHub Actions Architecture](#)
- [AWS S3 Filepaths](#)
- [AWS Lambda Details](#)
- [AWS RDS Database Details](#)
- [AWS EC2 Server Details](#)
- [AWS SFTP Processes](#)
- [Power BI Reports](#)
- [Access Requests](#)
- [SLA Tier](#)
- [Application ranking \(MC, BUI or Other\)](#)
- [Vendor Contact Details](#)
- [SNOW Assignment Group](#)
- [Storm processes and procedures](#)
- [Alert status checklist 1,2 and 3](#)
- [Application coverage for storm](#)
- [DR documentation for MC and BUI application](#)
- [DR testing checklists and results](#)
- [Contact list](#)
- [SOX documentation](#)
- [Business Go-Live approval](#)
- [Application Specific details](#)
- [Service Now Knowledge Articles](#)

Objective of the EV Charger Project

FPL plans to enter '**Behind the Meter (BTM)**' business with a voluntary tariff; Initial offerings include solar, storage and EV charging

- Tariff enables FPL to provide utility-owned Distributed Energy Resources (**DER**) products to residential customers looking to avoid upfront costs and O&M. FPL will be responsible for installation, monitoring, and maintenance of equipment located on a customer's premise. Customers pay a monthly charge designed to recover all costs. Cumulative Present Value Revenue Requirements (**CPVRR**) neutral to general body over applicable term.
 - Capital costs will be included in rate base; monthly charge revenues will be included in base rate operating revenue
 - Long-term contract with termination payment will protect investment

Electric Vehicle Charging (EV) (Business Case 3867) - Utility-owned Level 2 charger and unlimited at-home off-peak charging subscription for a monthly fee

EV Subscription Description

As an example, for a fixed monthly fee, EV drivers receive two perks:

- A networked Level 2 (L2) charger installed and maintained by FPL
- "Unlimited nights and weekends" (i.e., off-peak) charging at home— with a minimal flat off-peak rate

Subscription is designed to reward participants with savings for charging off-peak, in return lowering FPL's system peak.

In addition, the networked L2 has added functionality:

- Allows FPL to schedule charging for off-peak (set it and forget it)
- Override available to charge at other times, but pay on-peak rates

FPL would maintain the ability to shed load at critical peak in the future

The EV charger project scope includes:

Mainframe:

- Create and set up a new rate for RESIDENTIAL ELECTRIC VEHICLE CHARGING SERVICES RIDER PILOT / RS-1EV.
- Add the necessary rate factors for RS-1EV rate.
- Set up a new bill-with-service bex business for the Monthly Program Charge with two options, Full Installation and Equipment Only Installation.
- Set up a new on-time stand-alone business for the EV Early Termination fee. This may have different options or may be variable.
- Allow rate change from RS-1 or RTR-1 to the new RS-1EV on the customer account.
- Allow set up of the new Monthly Program Charge on the customer account.
- Acquire the additional billing determinants (EV on/off-peak consumption) to be used in billing.
- Billing of the new RS-1EV rate, including the new energy charges and Monthly Program Charge.
- Billing of the Early Termination fee, as applicable.
- Allow cancel/replace of energy and Monthly Program Charge.
- Report EV off-peak consumption.
- Report EV off-peak consumption calculated amount. (TBD)

Cloud:

- Receive from FPL Evolution Central Manager system the Option Charge Point Protocol (OCPP) Transaction Data, which is the protocol used for communication between EV charging stations and a central management system
- Receive EV charging transactions, which is the consumption of kWh during a specified period that an EV is plugged into a charging station, stored in 'EV MDM' system
- At time of billing, run processes to calculate on-peak and off-peak consumption billing determinants, using reading information from charging transactions.
- Interface with mainframe system to provide EV charger device billing determinants for accounts that are billing on a particular cycle day

[PowerPoint overview - EV Charger](#)

FMEA, RACI and Checklist

[EVMDM FMEA](#)

[EVMDM RACI](#)

[EVMDM Checklist](#)

Mainframe Transition to Support

[Mainframe Transition to Support Documents](#)

[Mainframe Screens TTS Document.xlsx](#)

GLMT FINANCIAL TRANSLATIONS = [GL Point Acct Breakdown for EV 06-30-22 for PROD.xlsx](#)

REPORTS = [GL Point Acct Breakdown for EV 06-30-22 CR.xlsx](#)

Mainframe file exchange with cloud via EDI

Outgoing Files

File (Days of run)	Prod Job Creating the File (Time)	Prod Job Sending the File (Time)	CS/CR Job Names	Prod Mainframe File Name (Outgoing)	Prod S3 Destination File Name
EV Residential Billing Request (Tuesday-Saturday)	KIMR061P (05:00)	KIMR007X (00:00)	KIMR07XS /KIMR07XR	KINP.EDI.MR91508.EV	EV_BillingRequest_YYYYMM DDTHMMSS.txt
Yearly Calendar file	KIMR082P	KIMR006X (ondemand)	KIMR06XS /KIMR06XR	KINP.MR08203.READ.SCHED.FTP	ReadingSchdule.tx
Train Cycles - Test Regions Only	KIMR917S/KIMR917R (train regions only)	N/A	KIMR04XS /KIMR04XS	KINT.CS.EDI.MR91701 KINT.CR.EDI.MR91701	CSTrainCycleUnload_YYMMD DHHMMSS.txt CRTrainCycleUnload_YYMMD DHHMMSS.txt

Incoming Files

File (Expected time - Days)	Hash	Copy Over	Files used by	Late Notification /Time	Remarks
EV Residential Billing Response (13:30 - Cycle)	KISIS62P	KIMR93 2P	KIPB170P	KIMR933P/14:00	
EV Residential Contingency Billing Response (19:30 - Cycle)	KISIS63P	KIMR93 4P	KIPB170P	KIMR935P/20:00	This file would be used by KIPB170P in event the regular response file was not available. It is sent one day prior to the regular EV Response file

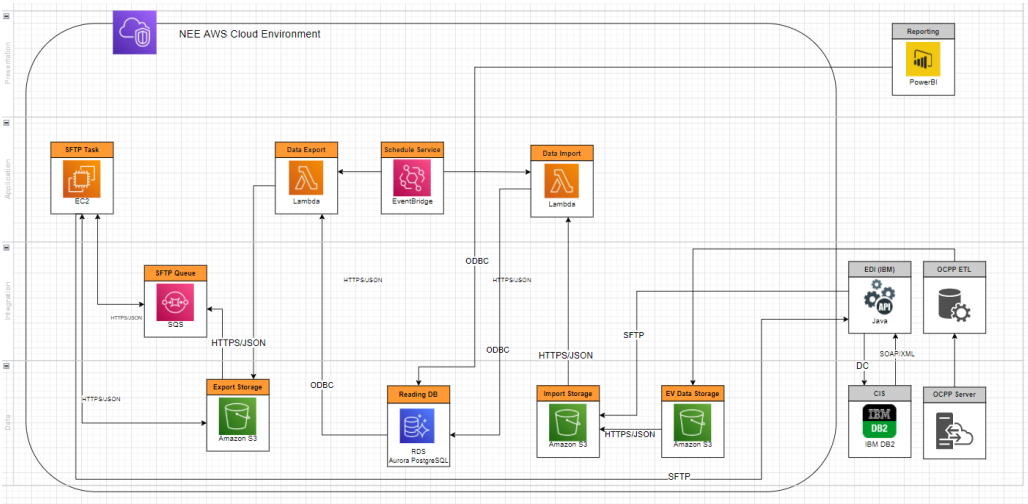
Cloud Technology Stack

Back-end/API	javaScript(NodeJs), Jest (Unit testing)
Cloud	Amazon S3, AWS Secrets Manager, EC2, AWS SQS, AWS Lambda, Amazon EventBridge, SFTP Services, AWS RDS
Database	AWS Aurora PostgreSQL
Reporting	PowerBI

Cloud Architecture Diagram

BehindTheMeter_AWS.drawio

Tool: Drawio



Cloud Architecture Zone Diagram

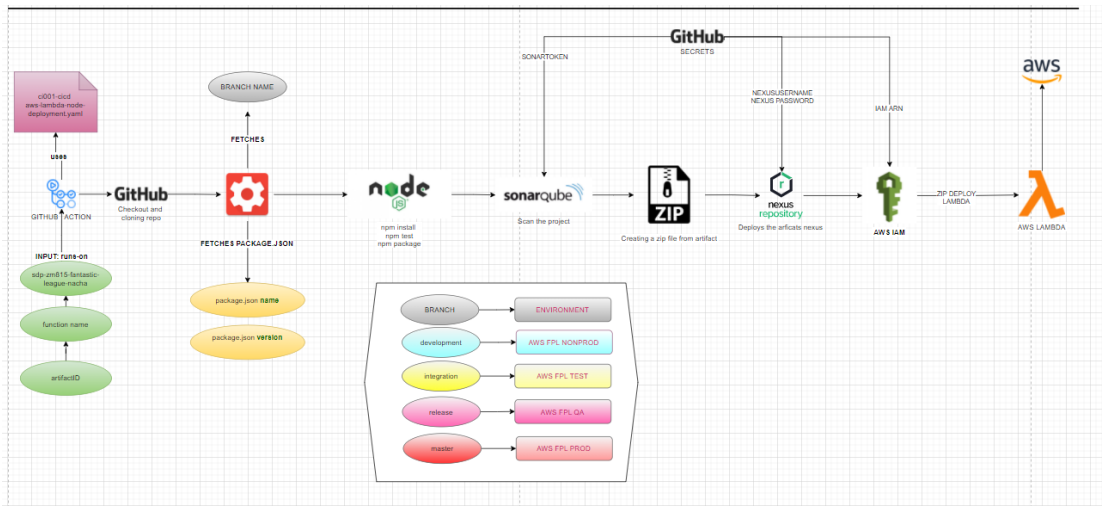
BehindTheMeter_AWS_AZ.drawio

Tool: Drawio

GitHub Branch Information

Branch name	mapped environment
master	FPLPROD
release	FPLQA
integration	FPLTEST
development	FPLNONPROD
feature	Will run the build only (no deployment to any environment)

GitHub Actions Architecture



AWS S3 Details

DEV	TEST	QA	PROD
File System: 2f9v-fp197-evmdm-s3 Lambda : 2f9v-fp197-evmdm-cf-s3	File System: 2ftv-fp197-evmdm-s3 Lambda: 2ftv-fp197-evmdm-cf-s3	File System: 2fqv-fp197-evmdm-s3 Lambda: 2fqv-fp197-evmdm-cf-s3	File System: 2fpv-fp197-evmdm-s3 Lambda: 2fpv-fp197-evmdm-cf-s3

AWS S3 Filepaths

[List of Filepaths](#)

AWS Lambda Details

[List of Lambda functions](#)

AWS RDS Database Details

Name	DEV	TEST	QA	PROD
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database	evmdmd	evmdmt	evmdmq	evmdmp
rds_proxy_host	aws-fnv-fp197-evmdm-rds-proxy.proxy-c4ucntsmqjsv.us-east-1.rds.amazonaws.com	aws-ftv-fp197-evmdm-rds-proxy.proxy-cq5nryu9qrxn.us-east-1.rds.amazonaws.com	aws-fqv-fp197-evmdm-rds-proxy.proxy-clfn2h31qwxn.us-east-1.rds.amazonaws.com	aws-fpv-fp197-evmdm-rds-proxy.proxy-cgqep0gwcrig.us-east-1.rds.amazonaws.com
rds_port	5432	5432	5432	5432
secret_name	2fnv-fp197-evmdm-RDS-Secret	2ftv-fp197-evmdm-RDS-Secret	2fqv-fp197-evmdm-RDS-Secret	2fpv-fp197-evmdm-RDS-Secret

AWS EC2 Server Details

Functionality	DEV	TEST	QA	PROD
SFTP	N/A	2FTV-GC-FP19709	2FQV-GC-FP19706	2FPV-GC-FP19706

AWS SFTP Processes

[SFTP Putty Process](#)

Power BI Reports

Sr. No.	Report Name	Description	Dev Link	Prod Link
1	Electric Vehicle Charger Reading	EV Charger Reading	http://corpbidev/corpanalytics/browse/CS-Customer%20Care/BPS/Reports/Main/Support	http://corpbi/corpanalytics/report/Customer%20Service/BPS/Reports/Main/Support/Electric%20Vehicle%20Charger%20Reading
2	Electric Vehicle Charger CARP Reading	Get CARP Reading for EV	http://corpbidev/corpanalytics/browse/CS-Customer%20Care/BPS/Reports/Main/Support	http://corpbi/corpanalytics/report/Customer%20Service/BPS/Reports/Main/Support/Electric%20Vehicle%20Charger%20CARP%20Reading

Access Requests

Access Type	Requested Via	Details
Developer access	Service Now Active Directory	AWS_FPL_EV_MDM_DB AWS-FPLProd-FBRS-Developer
AWS Console Access	Service Now AWS Console	FPLNonProd-DevOps FPLTest-DevOps FPLQA-ViewOnly FPLProd-ViewOnly
BitBucket/GitHub	Service Now Active Directory	Github_Nee_Users Github_Fplu_Users Github_Fple_Users
Power BI Report	Service Now Active Directory	BI_BPS_CONSUMERS
Business Access to EVMDM Database	EAMS	RequestAccess-EVMDM-DB.doc

SLA Tier

SLA Document

Service level agreements (SLA) - incidents

Urgency 	1: High Work Stopped	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM	2: High SRT < 30 Min 24*7 RT < 8 Hour 24*7	1: Critical SRT: < 15 Min 24*7 RT: < 4 Hour 24*7	1: Critical SRT: < 15 Min 24*7 RT: < 4 Hour 24*7
	2: Moderate Work around available	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM	2: High SRT < 30 Min 24*7 RT < 8 Hour 24*7	2: High SRT < 30 Min 24*7 RT < 8 Hour 24*7	2: High SRT < 30 Min 24*7 RT < 8 Hour 24*7
	3: Low Working Slowly intermittently	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM	3: Moderate SRT<2-hour M-F 8:00 AM-5:00 PM RT< 8-hour M-F 8:00 AM -5:00 PM
	4: None No business Impact	4: Low SRT<8-hour M-F 8:00 AM-5:00 PM RT< 40-hour M-F 8:00 AM -5:00 PM	4: Low SRT<8-hour M-F 8:00 AM-5:00 PM RT< 40-hour M-F 8:00 AM -5:00 PM	4: Low SRT<8-hour M-F 8:00 AM-5:00 PM RT< 40-hour M-F 8:00 AM -5:00 PM	4: Low SRT<8-hour M-F 8:00 AM-5:00 PM RT< 40-hour M-F 8:00 AM -5:00 PM
	Impact 	4: Single User	3:Several User	2: Site, Department, Executives	1: Global or External Customer

SRT: Service Response Time to customer
RT: Resolution Time

Application ranking (MC, BUI or Other)

Business Critical System

FPL IT Business Critical Systems:

- Second Tier Applications within Business Processes deemed essential to the Company to remain operational and, if unavailable, would result in severe financial loss, public embarrassment or the inability to meet corporate safety and/or regulatory requirements.
- Recovery Plans reviewed and tested annually
- Restoration Time Objective (RTO): 8-24 hours
- Recovery Point Objective (RPO): 30 sec - 10 mins

Vendor Contact Details

Not Applicable

SNOW Assignment Group

Support Group - L2_AMS_FPLS_COG

Approval Group - L3_DEV_FPLS_RM

Storm processes and procedures

Potential need to run Lambda's manually if readings are delayed

Manual monitoring required

Alert status checklist 1,2 and 3

[Alert 1/2/3 Checklist](#)

Application coverage for storm

24 x 7

DR documentation for MC and BUI application

N/A

DR testing checklists and results

N/A

Contact list

Name	Role/Organization
Carlos Hinojosa	CS Application Owner
Karen Oei	CS Product Owner
Jackie Valenzuela	CS Product Owner
Heidi Kramer	CS Product Manager
Rohit Ravindranath	IT Agile Delivery Manager
Kristy Stockett	IT Scrum Master
Roman Maciag	IT Business Analyst
Juan Sisto	IT Mainframe SME
Javier Pachas	IT Mainframe Tech Lead
Rekha Gangadharan	IT Mainframe Tech Lead
Sarang Harne	IT Mainframe Tech Lead
Habib Shaik	IT Mainframe Developer
Errol Gamory	IT Mainframe Architect
Nicolas Zerrate	IT Cloud Architect/Tech Lead
Anand Avadutha	IT Cloud Infrastructure Developer
Rudra Patil	IT AWS Lambda Developer
Andres Salinas	IT AWS Lambda Developer
Zachary Barfield	IT FPL EVolution Developer
Khairnar, Swati	IT BA/Tester
Sahil Punj	CS Business Analyst
Peter Nunez	CS Business Analyst
Mike Masson	CS Business Analyst

David Cashman	CS Business Analyst
Iliana Rodriguez	CS Business SME
Nilesh Ukirde	CS Business Analyst
Desiree Trinidad	CS Business Analyst
Erik Johnson	CS Business Analyst
Narendra Chennamsetti	ODM Developer
Larry Logan	ODM PO/SME
Dina Lien	BI Report Developer
Maria Sanchez	ECC Team RTE
Sirish Peddi	ECC Scrum Master
Mahaboob peera Shaik	ECC Business Analyst
Marcelo Balda	ECC CSF Lead
Rahul Chuttiparayil	ECC Mainframe Tech Lead
Eduardo Lorenzo Santos	ECC StreamServe Lead
Arian Abrahantes quintana	ECC Product Owner
Sathiya Krishnachalam	EDI Services
Cecil Worley	CI/CD Services
Pratap Padhy	CI/CD Services
Kenny Alvarez	CI/CD Services
Muhammed Mugala	CI/CD Services
Myrthleen Stevens	CI/CD Services

SOX documentation

N/A

Business Go-Live approval



RE EV Billing for 84 - GoNo-GO.msg



RE UAT approval r...lling release.msg

Application Specific details

[How to import the yearly holiday schedule](#)

[How to adjust schedule for EST/DST for daylight savings time start/end](#)

Service Now Knowledge Articles

Steps to run processes manually if automated process fails or needs to be run again

KA Number	Description
	no tickets to date