

# Future Gas Reforms



# AGENDA

## 1. East Coast Gas System Adequacy

- I. Review of Wallumbilla Gas Supply Hub and pipeline capacity trading framework
- II. Stage 2 reforms

## 2. Hydrogen and renewable gas reforms

- I. Victorian DWGM distributed facility integration
- II. Victorian Essential Services Commission - Remaking the Gas Distribution System Code of Practice

# East Coast Gas System Adequacy

- Stage 2

# Background

August 2022 Energy Ministers Meeting outlined three key actions;

- develop and progress a package of priority reforms to support a fit for purpose security and reliability framework to identify and respond to security of supply risks in the east coast gas market;
- develop and submit rule changes to improve the Wallumbilla Gas Supply Hub to increase flexibility and liquidity of gas markets when responding to demand and supply shocks; and
- further investigate options to extend a third party access framework for upstream gas infrastructure and gas storage facilities, as recommended by the ACCC, to ensure gas producers can access critical infrastructure.

# East Coast Gas System Adequacy

- Stage 1 – Urgently extend AEMO’s powers and functions to manage supply shortfalls in east coast market prior to winter 2023
- Stage 2 – consider more formal tools to guide how or when AEMO deploys these powers, consultation on the more structured approach to occur beyond winter 2023
  - The EMM minutes, consultation papers, and industry presentations contained a high level outline of what the stage 2 reforms could contain.

# East Coast Gas System Adequacy

- a Projected Assessment of System Adequacy (PASA) process and 'lack of reserve' framework, adapted for gas
- a reliability standard for the east coast gas market against which system security concerns and responses can be assessed and calibrated
- a framework to manage issues such as a gas Reliability and Emergency Reserve Trader (RERT) style framework
- Adapting and aligning longer-term gas forecasting and planning frameworks with the new gas security and reliability framework and proposed reliability standard
- mechanisms to improve cost allocation associated with system management actions and compensations

# East Coast Gas System Adequacy

- Consideration of obligations on gas retailers and generators to provide information on the arrangements they have in place to meet the expected needs of their customers and actions they may need to take to meet minimum requirements including additional contracting of supply, transport or storage.
- Anonymised delivery in the Gas Supply Hub
- Harmonising prudential arrangements across east coast markets
- Third party access to upstream infrastructure and storage facilities

# Hydrogen & Renewable gas reforms



- Law changes
- Market design changes
- Code changes



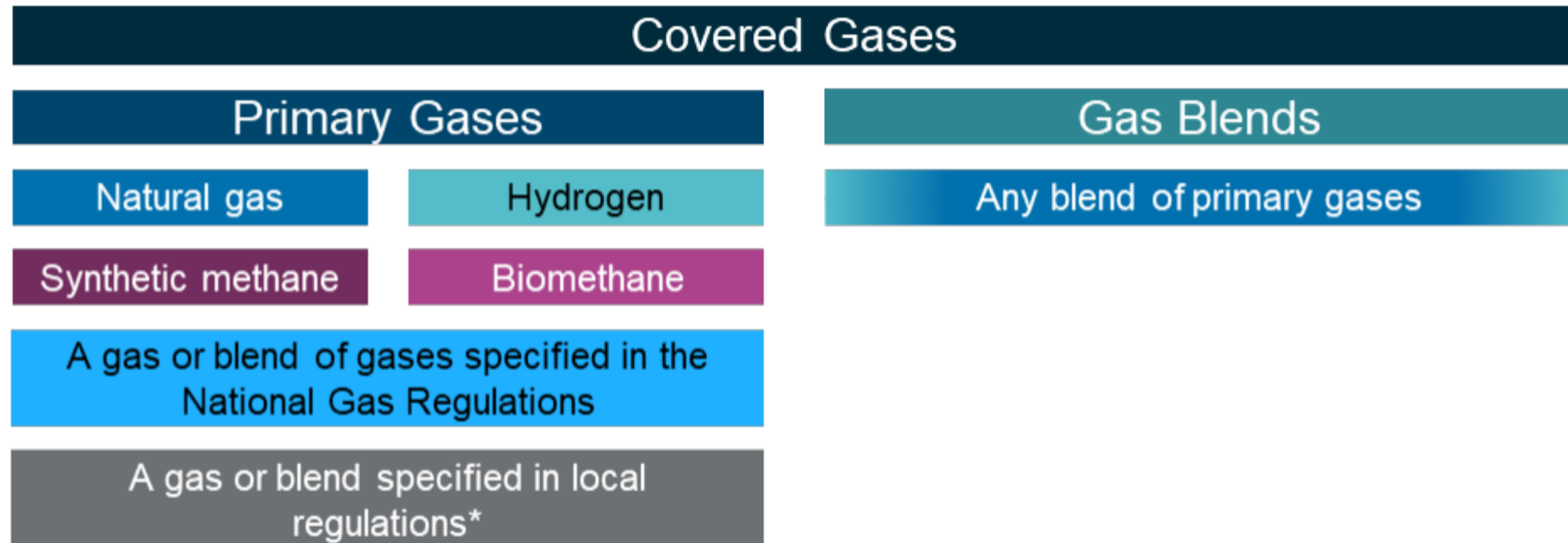
# Background – Key Dates

- AEMC review commenced – August 2021
- Review expanded to include DWGM – October 2021
- Review completed – September 2022
  - Changes required to GBB, STTM, DWGM & NERL (Retail)
- Energy Ministers agreed to implement review – October 2022
- DWGM Rules (NGR) effective date – May 2025
- Laws (NGL) effective pending SA parliament – ~early 2025

# Law changes

- The National Gas Law (NGL) will be extended from natural gas to 'covered gases', while the National Energy Retail Law (NERL) will be extended to 'natural gas equivalents' (NGEs).
- This will allow the National Gas Rules (NGR) and National Energy Retail Rules (NERR) to be extended to these gases.

# What gas's are in scope?



\*Applicable in that jurisdiction only

# Components of change

- Extend the application of the pipeline access regime to transmission and distribution pipelines involved in the transportation of covered gases
- Extend the minimum ring-fencing requirements
- Allow the AEMC to extend the application of the market transparency mechanisms (i.e. the GSOO, Bulletin Board, VGPR, AER gas price reporting functions, etc)
- Allow all facilitated markets to deal with the wholesale supply of any covered gas

# DWGM distribution connected facilities

- Connections
- Scheduling & Constraints
- Gas Quality & Metering

# Background – Key Dates

- Rules (NGR) published – 8 Sept 2022
- AEMO Procedures publication – 1 Feb 2024
- AEMO Procedures effective date – 1 May 2024
- AEMO Pre-Production Systems for testing – ~1 Feb 2023
- AEMO Production Systems Go-Live – 1 May 2024
- Rules (NGR) effective date – 1 May 2024

# DWGM Distribution Connected Facilities requirements

- Final Rules (NGR) were published on 8 September 2022, with an effective date of 1 May 2024
- AEMO also received a request from the Victorian Government to abolish the state-wide heating value, and move all retail customers to a zonal heating value.
- AEMO put together a project team to address the Distributed Connected Facility (DCF) rule changes, Hydrogen Integration (H2) and Zonal Heating Values (ZHV)

# DCF Scheduling

Under the current rules, only facilities connected to the transmission system are allowed to sell gas on the DWGM

The new rules, effective 1 May 2024, will allow for distribution connected facilities to physically inject gas into a declared distribution system, and sell that gas on the DWGM

AEMO is currently developing the scheduling procedures for DCF's to cover the new rule changes



# DCF Scheduling - Constraints

- AEMO and the DB's are working together to develop the Wholesale Market Distribution Operational Coordination Procedures.
  - Constraint methodology and limitations
  - Participant interface
  - Improved nodal demand forecasts for DCF's
- Net Bidding Facility Procedure
  - Classification of net bidding facilities
  - Operational requirements for net bidding facilities

# Gas Quality implications

- Historically, AEMO has managed gas quality in the DTS through the Gas Quality Guidelines, monitoring plans with facility operators and standards for natural gas
- The new rules require AEMO to publish a Procedure detailing Gas Quality Monitoring requirements, and will encompass all of AEMO's previous gas quality documents
- These include
  - Standard gas quality specification for the DTS
  - Monitoring requirements, including standards and monitoring systems
  - Equipment to be used for monitoring systems, and standards for equipment
  - Gas quality monitoring plans and compliance monitoring
  - Temporary and permanent modifications to monitoring arrangements
  - Testing of monitoring systems

# Gas Quality implications

The new guidelines will help AEMO to manage Gas Quality in the DTS by

- Streamlining the current process under one document
- Transparency for any new gas quality installations
- Document clear expectations for Gas Quality Monitoring Plans
- Clearly differentiate between transmission connected and distribution connected facilities



# Metering Implications



As we add DCF's and H2 into the system, we must consider how these facilities will be metered

- DCF's will inject into distribution, but trade on the wholesale market
- Net bidding facilities, which are looking to blend their renewable gas with natural gas
- H2 has big impacts to metering by way of Heating values and compressibility impacts

# Metering Implications

The new rule changes for DCF's and Hydrogen help to resolve some of these issues

- Expanding connection points to cover DCF's and net bidding facilities, requiring the same standard of metering as current CTMs
- A new procedure, Metering Installation Coordination Procedures to cover
  - Temporary changes and modification of metering installation
  - Metering installation monitoring and data failures
  - Audits and reporting requirements

To further address the metering impacts of DCF's and H2, AEMO is pursuing changes to the way Heating Values are determined and allocated in Victorian gas networks.

# Victorian Gas Distribution System Code



- Metering
- Customer heating values

# Background – Key Dates

This project is aligned with the DCF and H2 rule changes.

- AEMO Procedures publication – 21 September 2023
- AEMO Procedures effective date – 1 May 2024
- AEMO Pre-Production Systems for testing – ~1 Feb 2024
- AEMO Production Systems Go-Live – 1 May 2024



# ZHV requirements

- ESC is updating the Gas Distribution System Code of Practice
  - ESC is investigating the option of removing references to heating values in the code.
  - This document holds the obligation for using state-wide HV's for Tariff V meters. This obligation would need to be added to AEMO's procedures
  - More information is available on their website,  
<https://www.esc.vic.gov.au/electricity-and-gas/codes-guidelines-and-policies/gas-distribution-system-code-practice/reviewing-gas-distribution-system-code-practice>
- AEMO received a letter from the Victorian Government to implement Zonal Heating Values for all Victorian retail customers, with the key driver being AGIG's Murray Valley Hydrogen Park



# Procedure changes

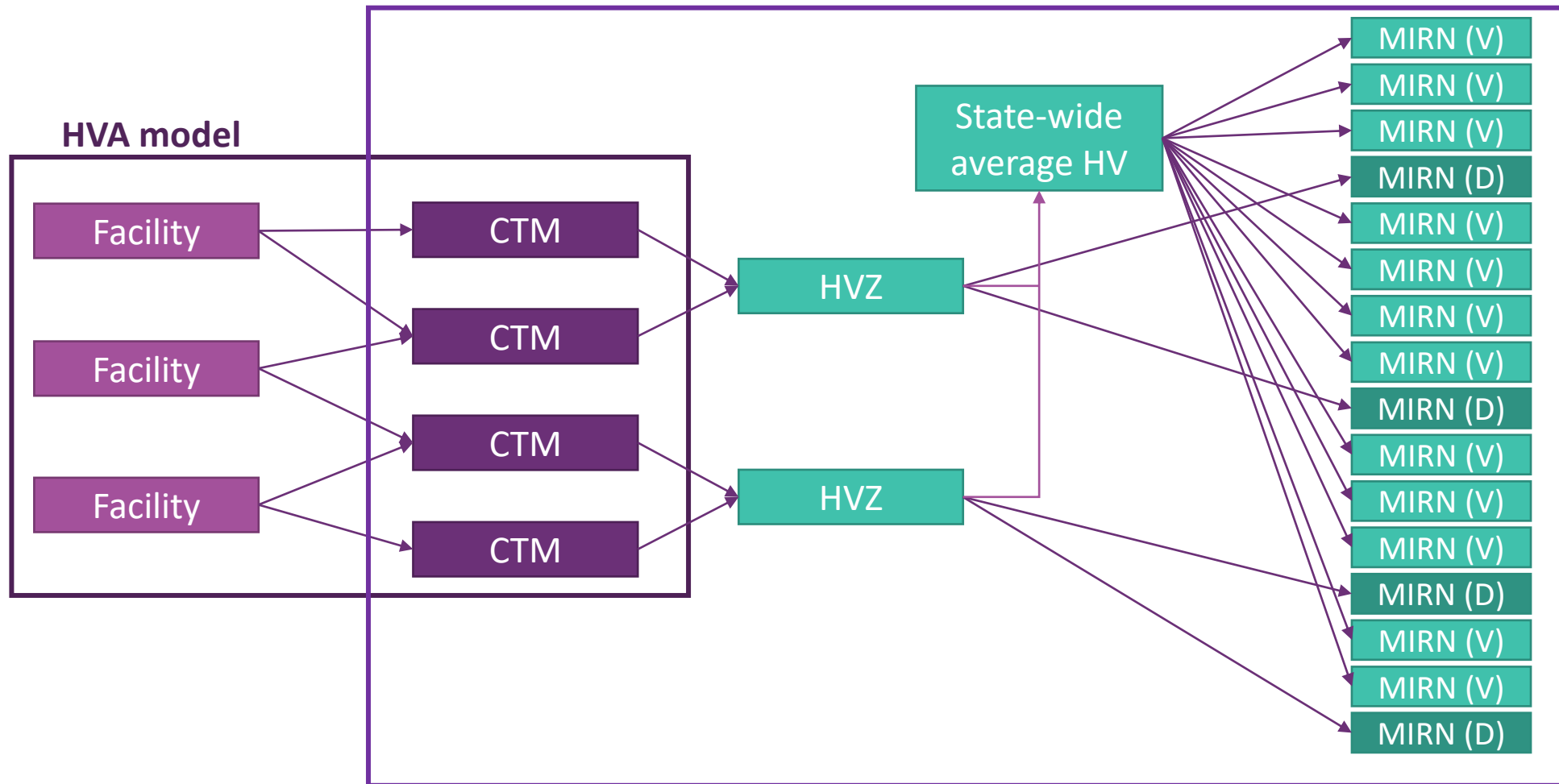
In order to move all customers away from the state-wide heating value, AEMO needs to update its procedures

- Update the Energy Calculation Procedures and Retail Market Procedures to use a zonal heating value
- Define how HVZ/CTM are to be assigned to MIRN's by distributors, and when the mapping is to be reviewed
- Add new MIBB reports for a daily zonal heating value, and a CTM to HVZ mapping report

# Distribution Businesses consultation

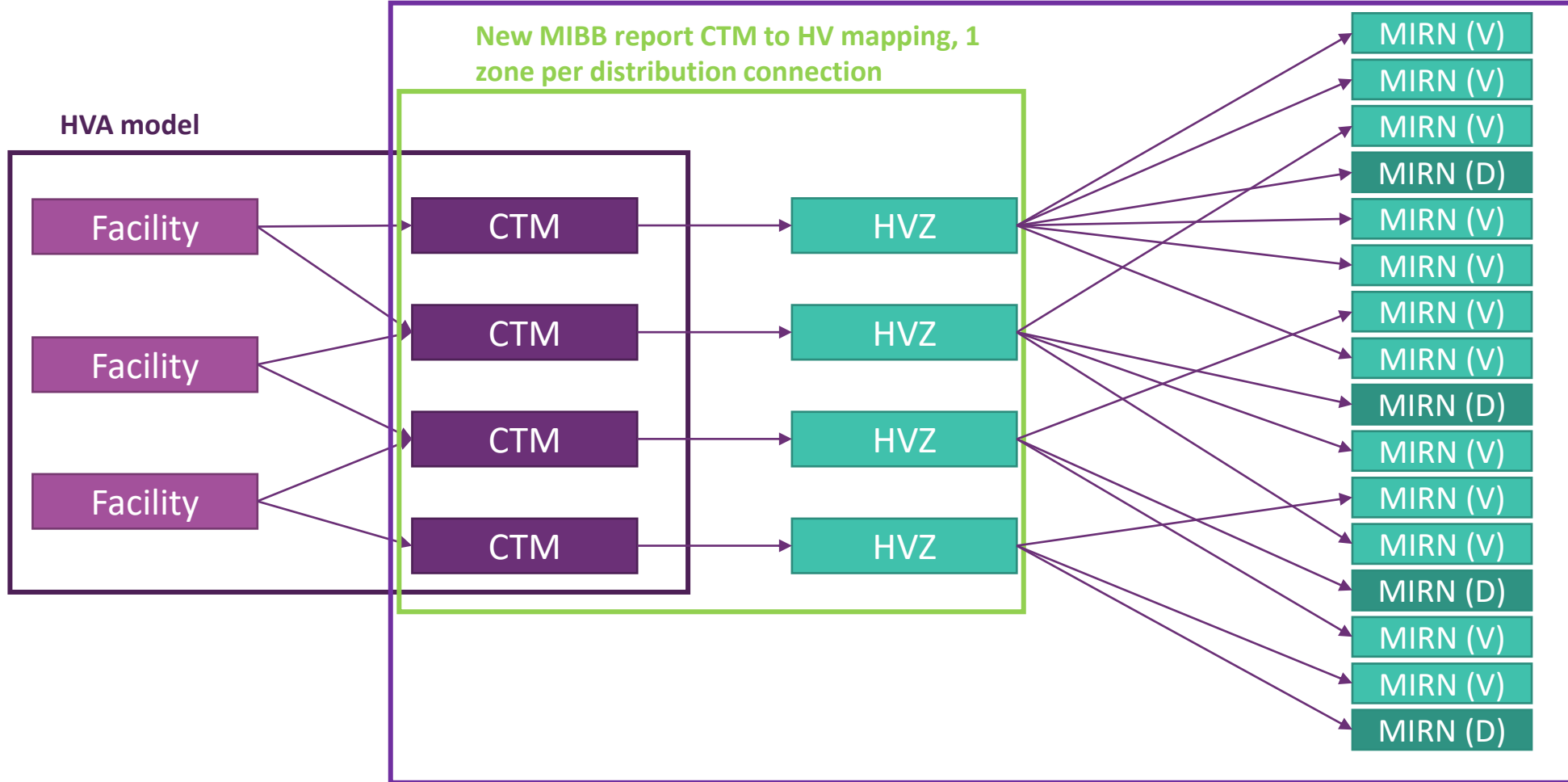
- A key component of the ZHV project will be to calculate the energy for all consumers using a zonal heating value, not the current state-wide heating value
- AEMO has also identified that as DCF's connect to the system, the current mapping of customers to HV zones using postcodes is not fit for purpose
- AEMO and the DB's are working toward a CTM to HV zone mapping, with each CTM having its own HV zone.
  - Moving from 43 zones to ~140 zones

# Current HV allocation process (retail)



**Tariff V uses state-wide Avg**  
**Tariff D uses current HV zones, which are generally multiple CTM's**

# Proposed HV allocation process (retail)

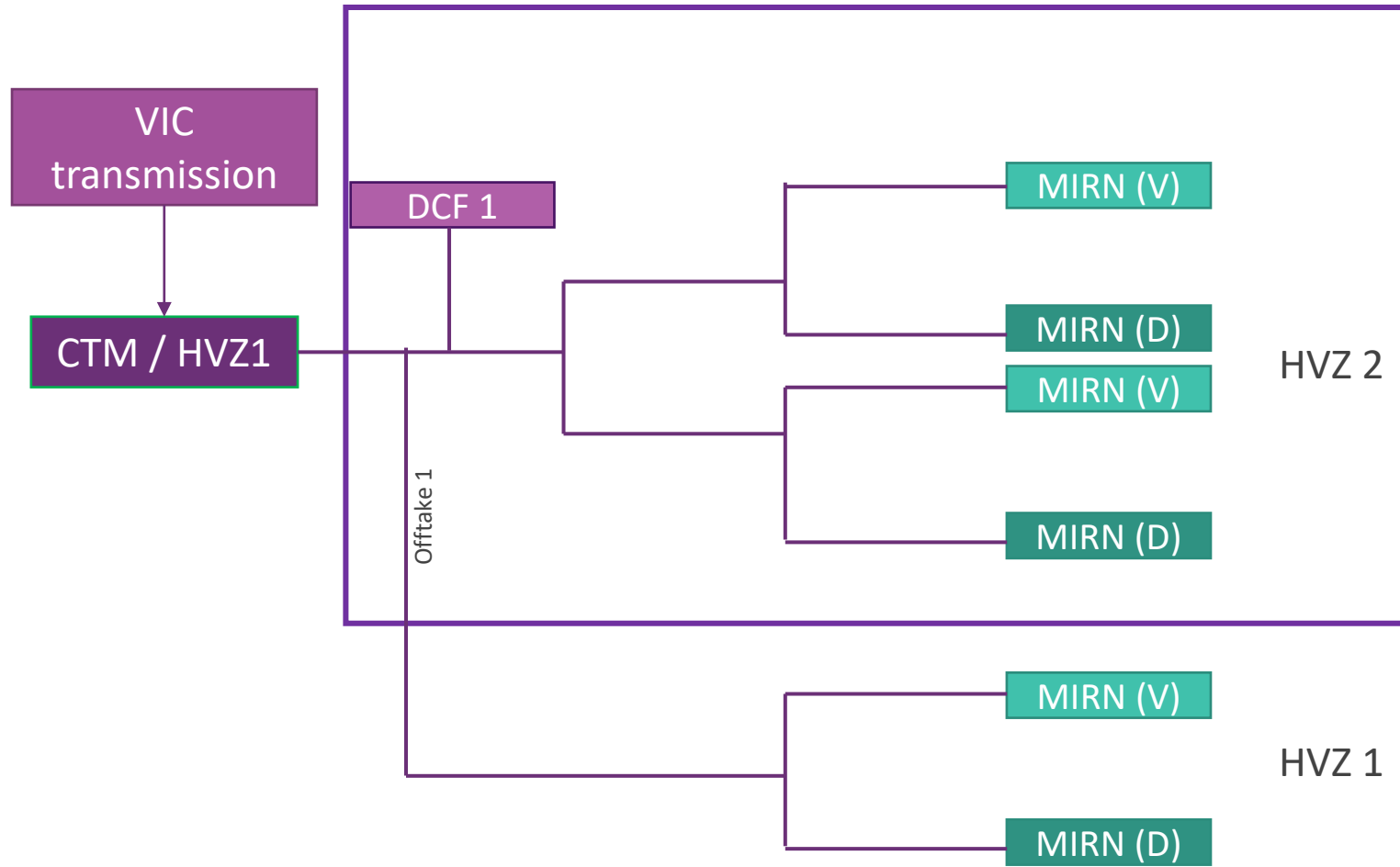


DB to map MIRN's to CTM's, and use new MIBB report to map to HVZ's

# Heating Value Zone Allocation

- AEMO will allocate zones to CTM's
- DB's will determine the appropriate CTM to assign each MIRN to, based on predominant flow
- As DCF's are introduced, blended zones will be assigned where required

# Blended HV zones



# Calculation of blended HVs

- AEMO to work with DB's on a case by case basis
- Where possible, leverage the existing HVA model
- May require additional equipment to be installed for proper calculation of flows for use in the HVA model
  - Flow meters
  - Pressure meters
  - Gas Chromatographs



For more information visit

[aemo.com.au](http://aemo.com.au)