



Session 2: Where is the Value in Improved Forecasts?

Impacts of Near-Term Forecasts on ISO and Market Participant Decisions

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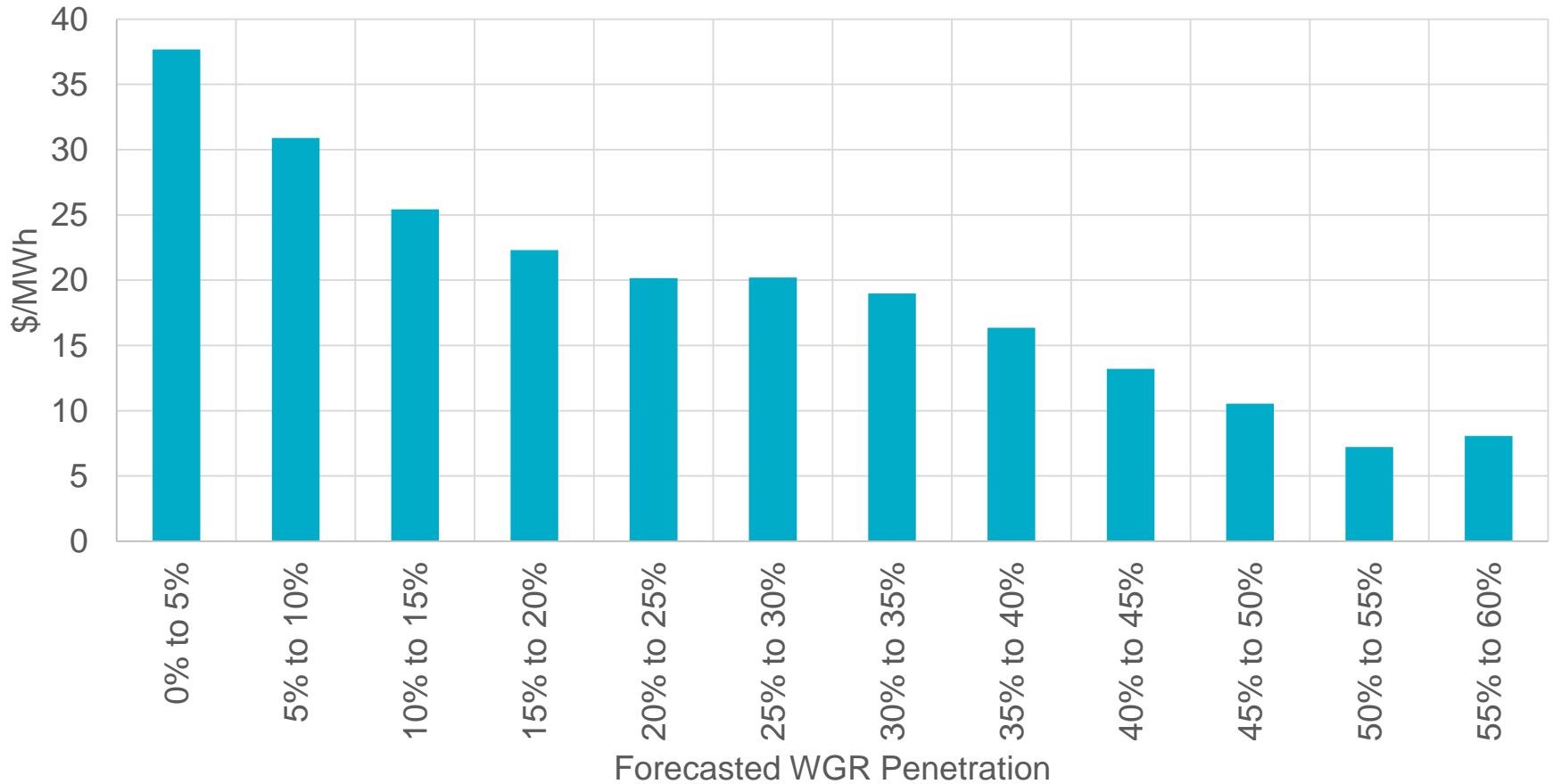
UVIG Forecasting Workshop and Tutorial
June 20-22, 2017
Atlanta, GA

Introduction

- Topics that have generally raised as a response to this question:
 - The efficiency of the Reliability Unit Commitment (RUC) process; and
 - The impact of uncertainty on Ancillary Service (AS) needs, particular Non-Spin reserves
- Instead we will focus on the relationships between the projected production capability from Intermittent Renewable Resources (IRRs) and Day-Ahead Market (DAM) results.
 - Specifically focus on Wind-powered Generation Resources for this presentation

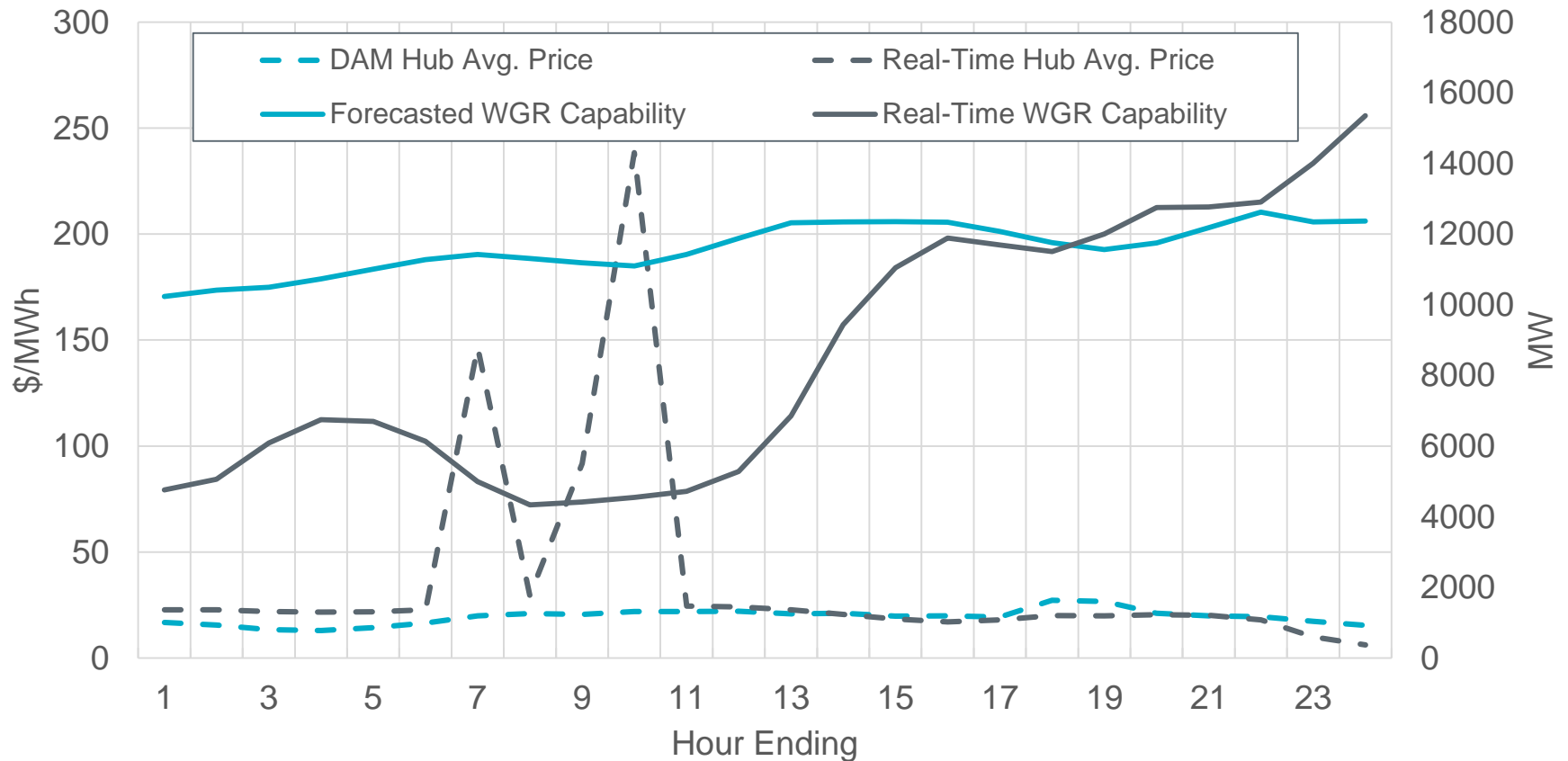
Relationship between Day-Ahead Energy Prices and Projected WGR Penetrations Levels

Average DAM Hub Average LMPs vs. Forecasted WGR Penetration
May '16 - April '17



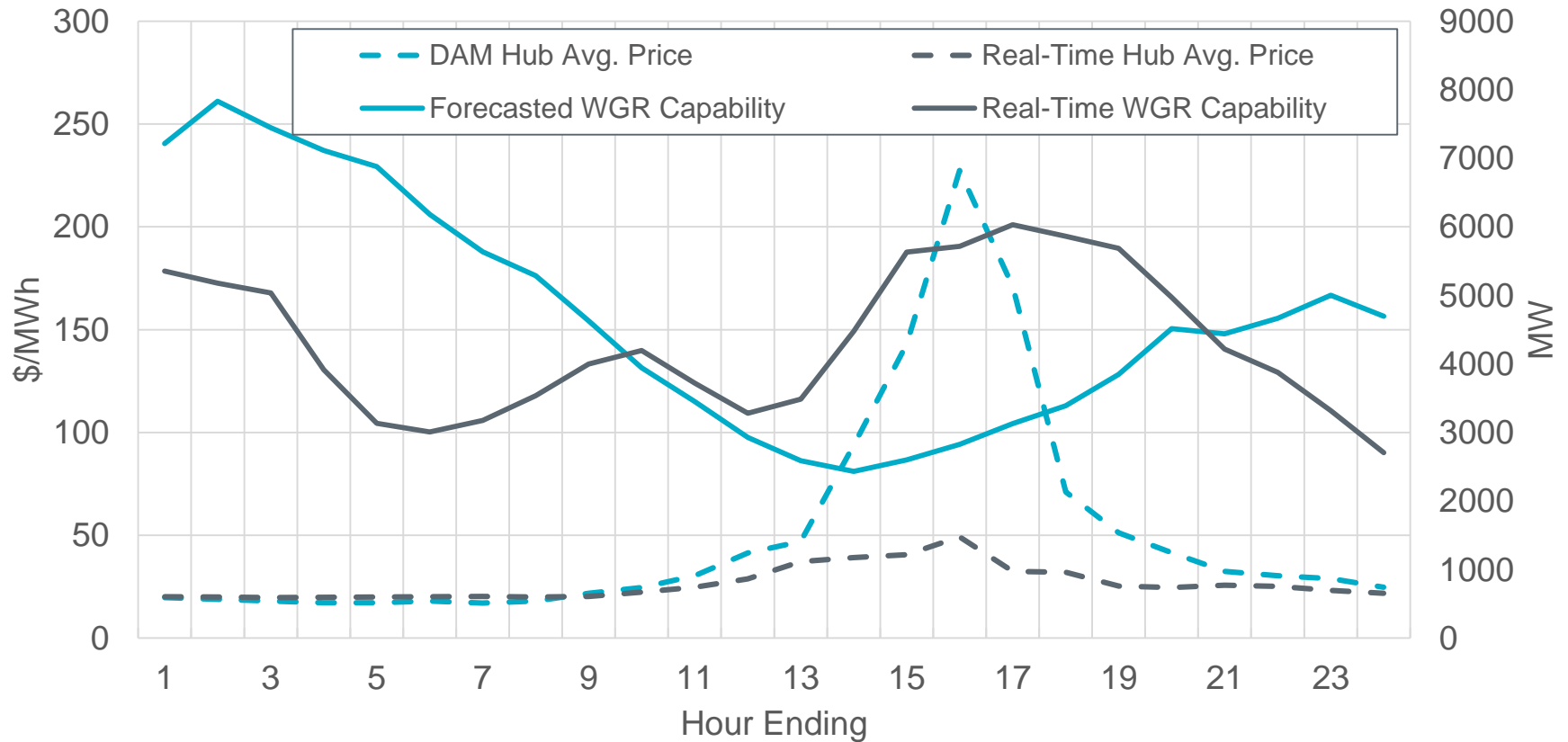
Relationship between Day-Ahead Energy Prices and Projected WGR Penetrations Levels

Real-Time vs. Day-Ahead WGR Capability & Prices
Jan. 21, 2017



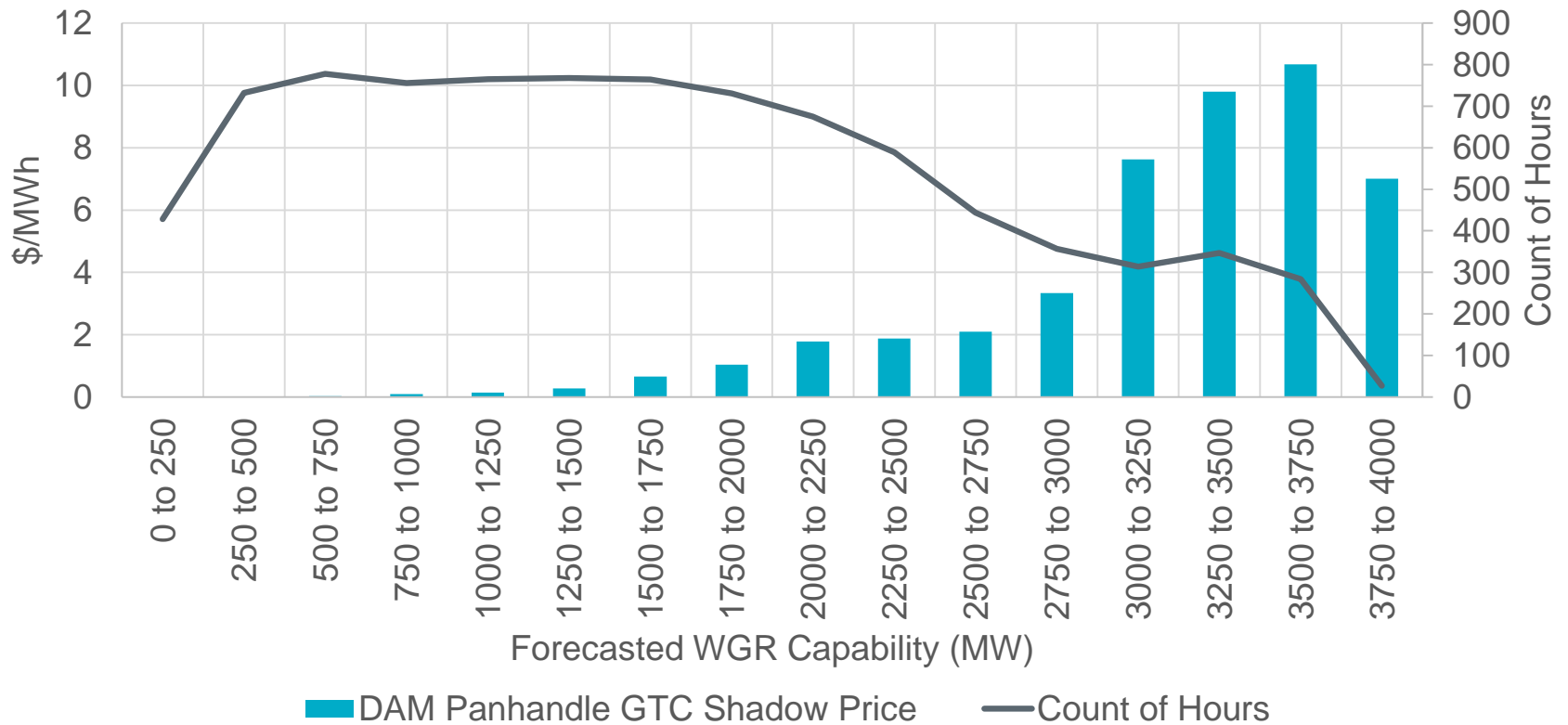
Relationship between Day-Ahead Energy Prices and Projected WGR Penetrations Levels

Real-Time vs. Day-Ahead WGR Capability & Prices
Aug. 12, 2016



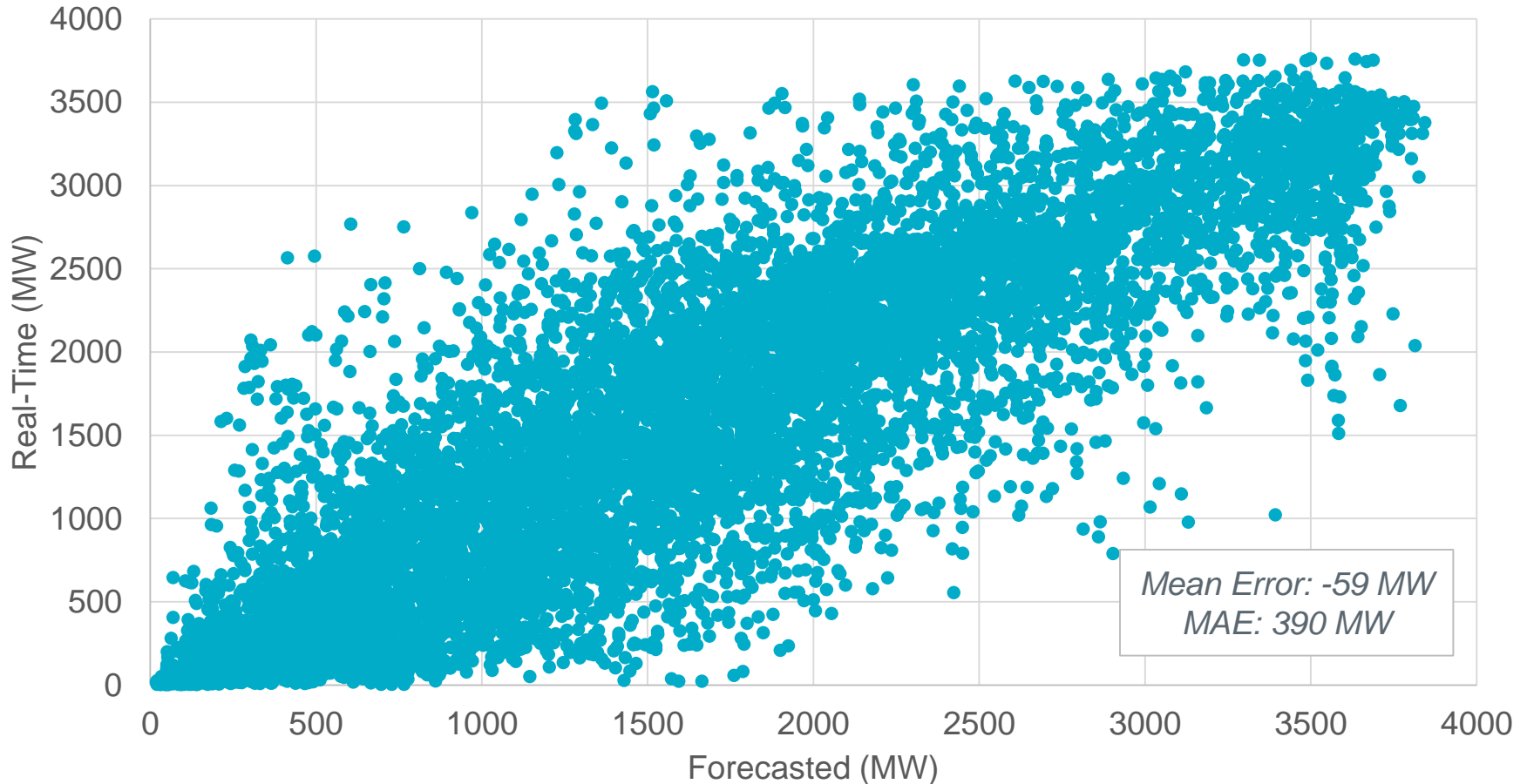
Relationship between Day-Ahead Congestion Prices and Projected WGR Penetrations Levels

Average DAM Shadow Price for the Panhandle Constraint vs. Forecasted Panhandle WGR Capability
 May '16 - April '17



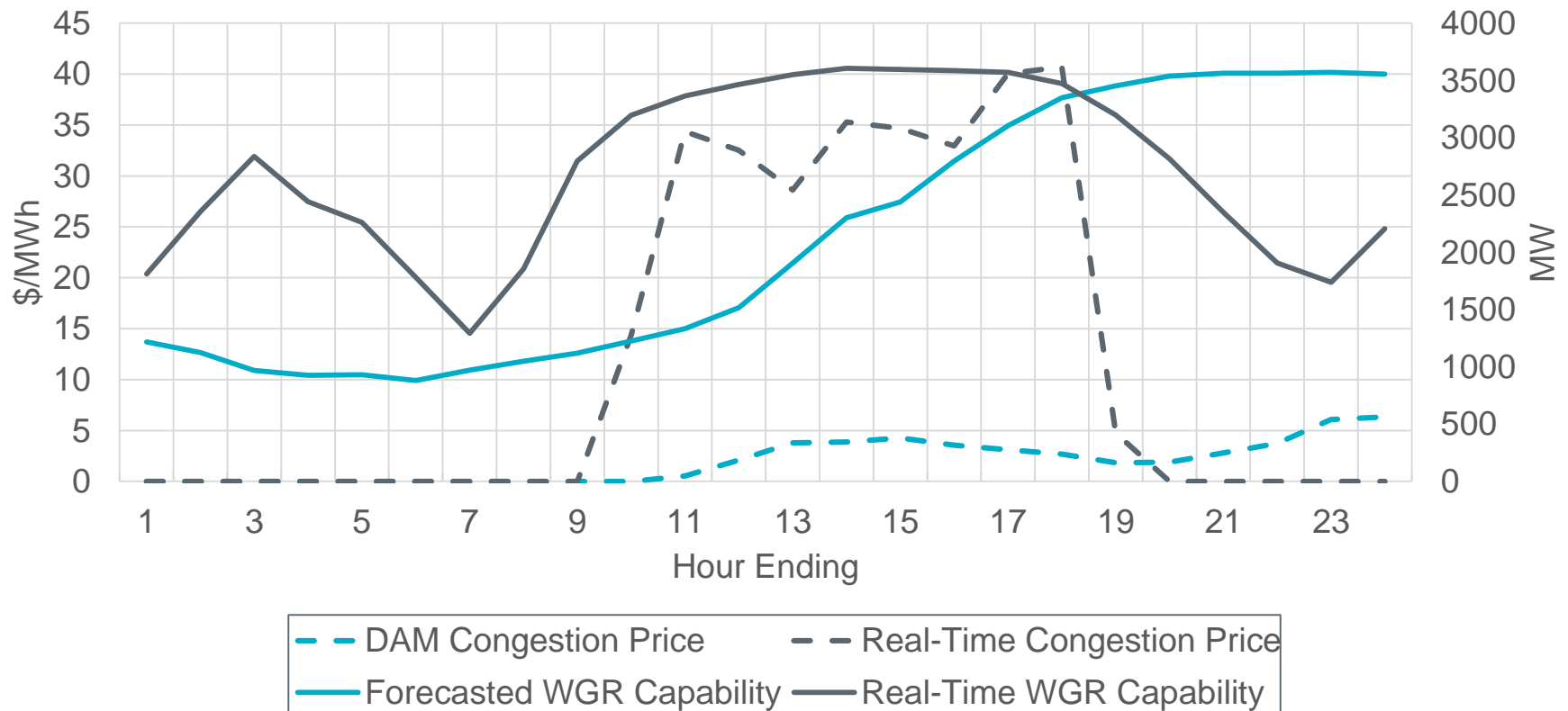
Relationship between Day-Ahead Congestion Prices and Projected WGR Penetrations Levels

Real-Time vs. Day-Ahead Panhandle WGR Capability
May '16 - April '17



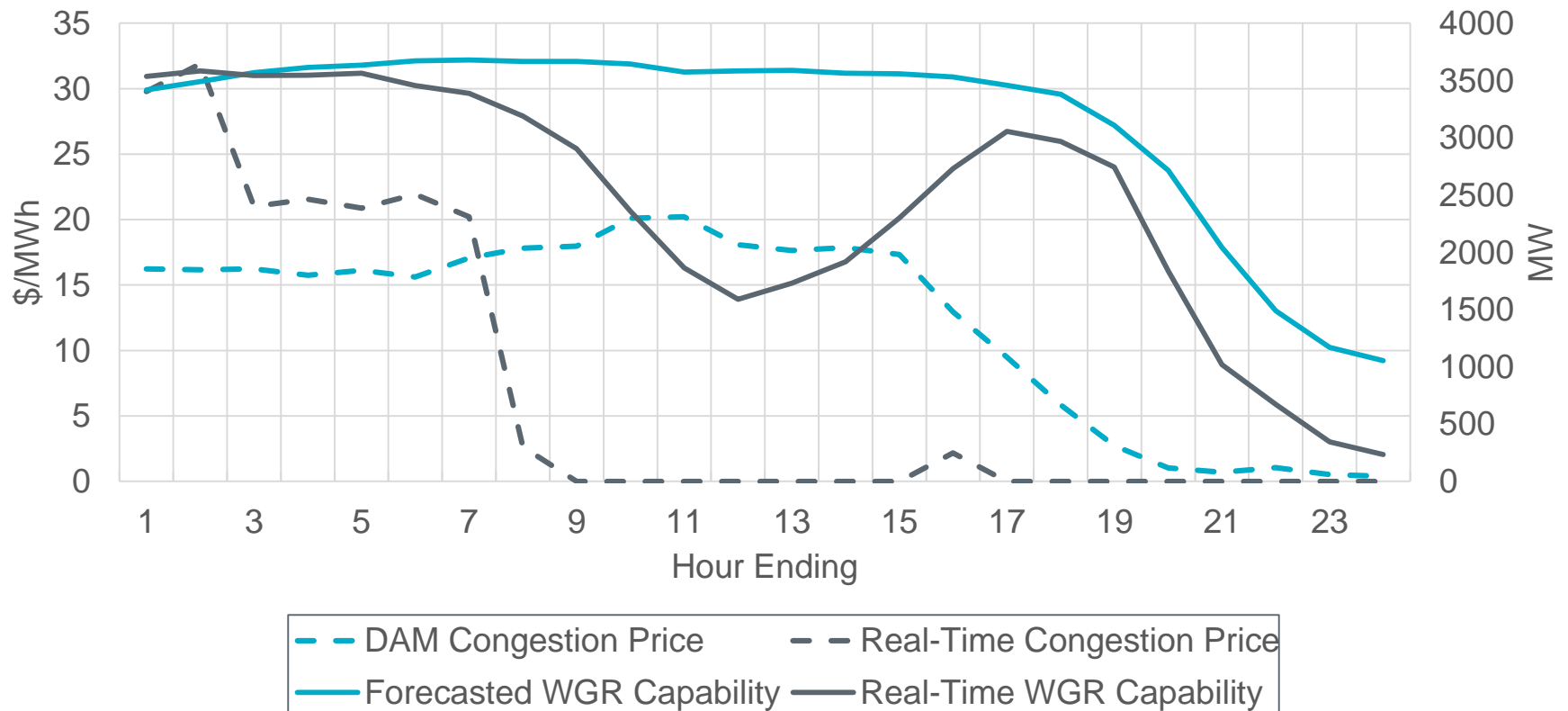
Relationship between Day-Ahead Congestion Prices and Projected WGR Penetrations Levels

Real-Time vs. Day-Ahead Panhandle WGR Capability & Congestion Prices
Mar. 29, 2017



Relationship between Day-Ahead Congestion Prices and Projected WGR Penetrations Levels

Real-Time vs. Day-Ahead Panhandle WGR Capability & Congestion Prices
Apr. 30, 2017



Observations

- Several additional factors contribute to market outcomes, particularly for the individual example days, but clearly there is a relationship.
 - Individuals may also have their own sources for similar information, outside of the centralized forecasts at ERCOT.
- Expectations can drive how the day is planned for by all parties, but it's also important to understand the uncertainty in all the data.
 - As an example, ERCOT's recently added Reliability Risk desk is focused on understanding and planning for this type of uncertainty.

Questions?