

2014 CARIS 2 Base Case: Follow-Up

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KCC

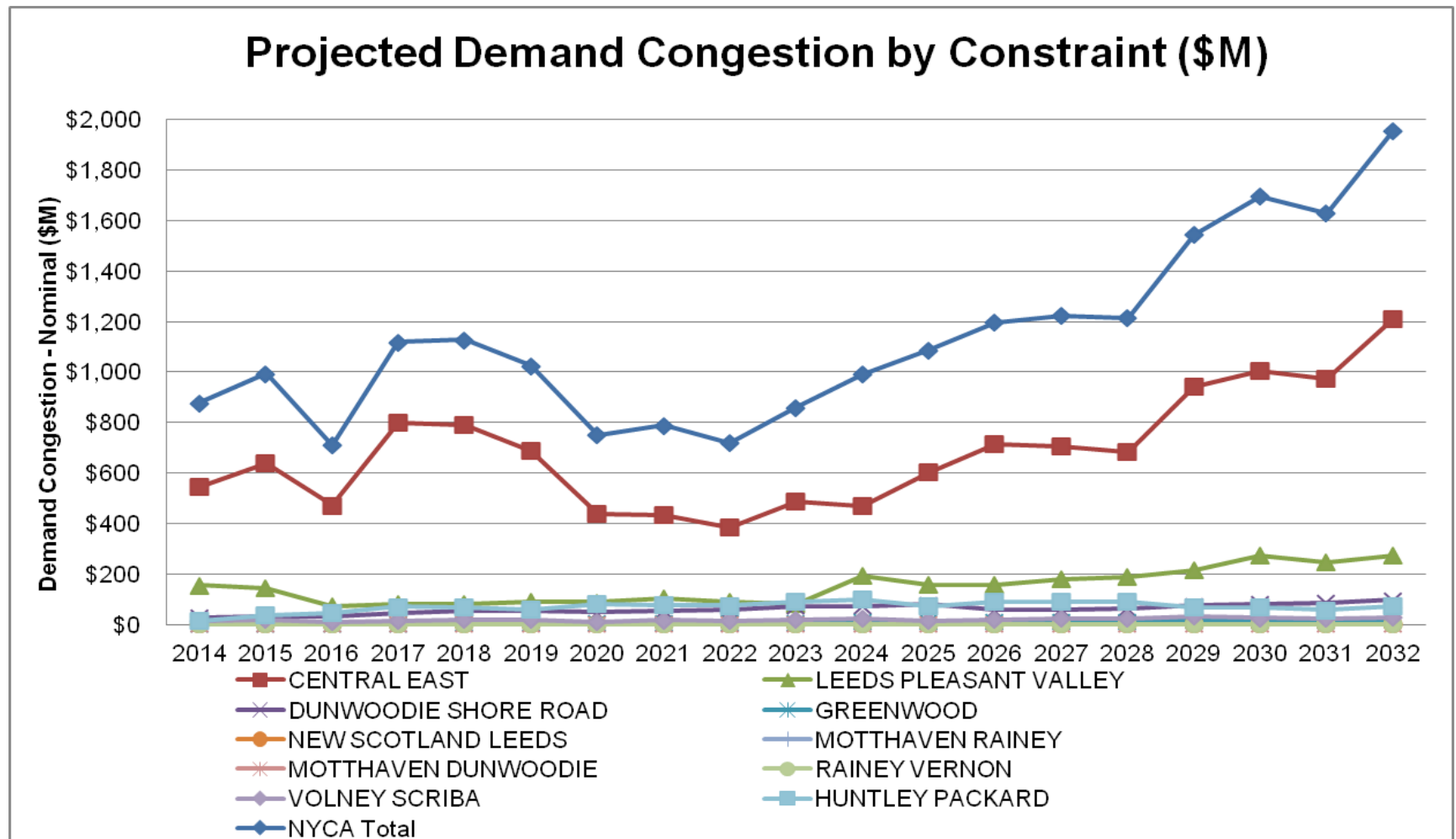
Background

- ◆ **Presentation on Preliminary CARIS 2 assumptions and results given at June 30th ESPWG**
- ◆ **A follow-up presentation to address previous comments given at July 24th ESPWG**
- ◆ **A comment requesting explanation of demand congestion pattern raised at July 24th ESPWG**

Projected Demand Congestion by Constraint (\$M)

Demand Congestion (\$M)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
CENTRAL EAST	\$545	\$641	\$472	\$799	\$790	\$687	\$437	\$433	\$385	\$486	\$469	\$605	\$714	\$705	\$682	\$941	\$1,006	\$974	\$1,208
LEEDS PLEASANT VALLEY	\$156	\$144	\$73	\$82	\$83	\$91	\$89	\$106	\$91	\$83	\$192	\$158	\$159	\$178	\$188	\$217	\$273	\$248	\$273
DUNWOODIE SHORE ROAD	\$29	\$31	\$34	\$45	\$55	\$56	\$48	\$55	\$59	\$73	\$73	\$80	\$58	\$61	\$63	\$75	\$82	\$85	\$97
GREENWOOD	\$2	\$3	\$3	\$4	\$5	\$6	\$5	\$6	\$7	\$8	\$9	\$10	\$11	\$12	\$12	\$15	\$16	\$17	\$18
NEW SCOTLAND LEEDS	\$2	\$2	\$0	\$0	\$0	\$0	\$1	\$3	\$3	\$0	\$2	\$0	\$0	\$0	\$0	\$0	\$1	\$0	\$1
MOTTHAVEN RAINEY	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
MOTTHAVEN DUNWOODIE	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RAINEY VERNON	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
VOLNEY SCRIBA	\$15	\$21	\$11	\$14	\$18	\$18	\$12	\$17	\$15	\$19	\$24	\$16	\$19	\$24	\$24	\$34	\$26	\$24	\$29
HUNTLEY PACKARD	\$16	\$37	\$47	\$70	\$67	\$60	\$81	\$76	\$75	\$90	\$101	\$75	\$92	\$89	\$91	\$69	\$67	\$58	\$74
NYCA Total	\$878	\$994	\$711	\$1,118	\$1,128	\$1,025	\$751	\$789	\$720	\$860	\$992	\$1,087	\$1,195	\$1,224	\$1,215	\$1,545	\$1,694	\$1,628	\$1,956

Projected Demand Congestion by Constraint (\$M)



Projected Demand Congestion Key Drivers

- ◆ **2016**
 - *MATS program (SO₂ price 3.68 \$/Ton in 2015, 1,315.52 \$/Ton in 2016) increases coal generation cost in Western PJM (1\$/MWh up to 20\$/MWh full-load adder) and Western NY*
 - *TOTS project offsets flow through Central East Interface*
- ◆ **2017**
 - *IESO Load decreases 2TWh compared to 2016*
 - *Ontario nuclear generation increases (returning from maintenance/refueling) 1.6TWh compared to 2016*
 - *National average natural gas price increases 6.4% compared to 2016*
- ◆ **2018**
 - *500MW Berrians CC Phase I in service, increasing NYC generation*
- ◆ **2019**
 - *Load increases in IESO by 2.1TWh, PJM by 6TWh, NYISO by 0.5TWh, while decreases in ISONE by 0.5TWh compared to 2018*
 - *Ontario nuclear generation decreases (due to maintenance/refueling) 2.2TWh compared to 2018*

Projected Demand Congestion Key Drivers

- ◆ **2020**
 - *National CO2 program increases PJM generation cost*
- ◆ **2022**
 - *Addition of 310MW Generic CC in Zone G*
 - *Ontario nuclear generation decreases (due to maintenance/refueling) 2.6TWh compared to 2021*
 - *Two upstate NY nuclear generators decrease (due to maintenance/refueling) by 1.1TWh compared to 2021*
 - *Load increases in IESO by 0.3TWh, PJM by 7.7TWh, NYISO by 0.1TWh, while decreases in ISONE by 0.1TWh compared to 2021*
- ◆ **2025**
 - *Addition of 1500MW Renewable in Zone A-F*
- ◆ **2028**
 - *Ontario nuclear generation decreases (due to maintenance/refueling) 2.6TWh compared to 2027*

Projected Demand Congestion Key Drivers

- ◆ **2029**
 - *Addition of 310MW Generic CC in Zone A*
 - *Ontario nuclear generation increases (returning from maintenance/refueling) 2.4TWh compared to 2028*
- ◆ **2031**
 - *Ontario nuclear generation decreases (due to maintenance/refueling) 2.6TWh compared to 2030*
- ◆ **2032**
 - *Addition of 310MW Generic CC in Zone B*
 - *Ontario nuclear generation increases (returning from maintenance/refueling) 2.4TWh compared to 2031*
 - *Two upstate NY nuclear generators decrease (due to maintenance/refueling) by 0.6TWh compared to 2031*

Next Steps

- ◆ **Presentation at 8/13 Business Issues Committee**
- ◆ **NYISO will address BIC comments at subsequent ESPWG (if necessary)**
- ◆ **Finalize CARIS 2 Database**
- ◆ **Evaluate specific CARIS 2 projects (as submitted)**
 - *Keep ESPWG informed*
 - *Engage ESPWG as required*

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