

Message

From: Bashir Bhana [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=F7CA92BB3384495D95F56B96EED74290-BASHIR BHAN]
Sent: 2017-11-23 4:45:03 PM
To: Robert Sinclair [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=8e455bbc4f044ab0a465978e12cc4755-Robert Sinc]; Darryl Yahoda [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=4e76e2e4e40a47a397cdbc912d5242f4-Darryl Yaho]; Ali Golriz [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=a6a66b829af64da9988ad7465e24217f-Ali Golriz]; David Barrett [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=ef6f3b035ceb494099260e6fa7603f36-David Barre]; Edward Arlitt [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=99dd55bb727945b5b273dfeac8b598d5-Edward Arli]; Andrew Pietrewicz [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=99d9da55c0a54dba8f5bc54affe89031-Andrew Piet]; George Pessione [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=fe1264f59cb3428a90a73766e96ea517-George Pess]
CC: Richard Zaworski [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=74d62df3fb2c4216ad3bf4a4804aeeab-Richard Zaw]; Jordan Penic [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=7d23bcd450594583bb40b447b35485da-Jordan Peni]
Subject: RE: Briefing DMO/MO - DER

Thanks Rob. Those are good ideas. We will take a look to see what can be provided. Thanks.

Bashir Bhana, P.Eng. | Manager, Resource Integration

Planning, Acquisitions, and Operations

Independent Electricity System Operator (IESO)

120 Adelaide Street West, Suite 1600 | Toronto, Ontario, M5H 1T1

416-969-6263 | bashir.bhana@ieso.ca | www.ieso.ca

From: Robert Sinclair
Sent: November 23, 2017 1:55 PM
To: Bashir Bhana; Darryl Yahoda; Ali Golriz; David Barrett; Edward Arlitt; Andrew Pietrewicz; George Pessione
Cc: Richard Zaworski; Jordan Penic
Subject: RE: Briefing DMO/MO - DER

Hi Bashir,

On the graph slide, it would be helpful to plot out the upward sloping rate trajectory over time, which will be affected in the near term by the fair hydro plan. To simplify the graphic and drive the idea home I'd also suggest removing lines that represent concepts that we are not discussing in this meeting such as the grid value of solar tariff. What could be helpful as an additional line is C&I customer costs if we believe they are materially lower. We have a tendency to assume the Net Metering is a residential program, but given the near term economics it is more likely that it is going to be a GAM avoidance strategy for C&I customers and in this framework storage may play a larger role than solar. If we can show 4 lines on this graph (listed below) that would highlight this bi-furcation it would be very powerful.

Declining project costs

1. Residential solar (already have)
2. C&I solar/storage

Rising rates

3. Retail rates with fair hydro factored in
4. Class A rates

From: Bashir Bhana

Sent: November 23, 2017 1:45 PM

To: Darryl Yahoda; Ali Golriz; David Barrett; Robert Sinclair; Edward Arlitt; Andrew Pietrewicz; George Pessione

Cc: Richard Zaworski; Jordan Penic

Subject: RE: Briefing DMO/MO - DER

Following up on our chat this morning, attached are slides on grid parity considerations.

Bashir Bhana, P.Eng. | Manager, Resource Integration

Planning, Acquisitions, and Operations

Independent Electricity System Operator (IESO)

120 Adelaide Street West, Suite 1600 | Toronto, Ontario, M5H 1T1

416-969-6263 | bashir.bhana@ieso.ca | www.ieso.ca

From: Darryl Yahoda

Sent: November 22, 2017 10:19 PM

To: Ali Golriz; David Barrett; Bashir Bhana; Robert Sinclair; Edward Arlitt

Cc: Richard Zaworski; Jordan Penic

Subject: RE: Briefing DMO/MO - DER

Thanks Ali. It's a good start.

A few initial suggestions for discussion

- 1) Add overview (probably match to bulleted list of information requested)
- 2) Perhaps slide 4 (DER definition) can move up front to set the discussion
- 3) Are the different DER installed capacities reconciled on slide 6 & 7 (assume footnotes were included for this purpose)
- 4) Slide 12 has a lot of text perhaps we can break into 3 slides or condense info down
- 5) Will need to discussion the last section of slide

From: Ali Golriz

Sent: November 22, 2017 5:14 PM

To: David Barrett; Darryl Yahoda; Bashir Bhana; Robert Sinclair; Edward Arlitt

Cc: Richard Zaworski; Jordan Penic

Subject: Re: Briefing DMO/MO - DER

Hi all,

Please find a very rough draft attached for discussion tomorrow. I'm glad the meeting was pushed back giving us time to refine.

Thank you both Bashir and Rob for the content provided. Please note that you had some conflicting input, which I have not attempted to reconcile yet.

Thanks,

Ali

From: David Barrett
Sent: Wednesday, November 22, 2017 11:59 AM
To: Darryl Yahoda; Bashir Bhana; Ali Golriz; Robert Sinclair; Edward Arlitt
Cc: Richard Zaworski; Jordan Penic
Subject: RE: Briefing DMO/MO - DER

Briefing was moved to Dec 6 so that gives us breathing room, deliverable now Dec 4. I'll still hold the coordination meeting for tomorrow though.

From: Darryl Yahoda
Sent: November 21, 2017 8:54 AM
To: Bashir Bhana; Ali Golriz; David Barrett; Robert Sinclair; Edward Arlitt; Adam Butterfield; Richard Duffy
Cc: Barbara Ellard; Richard Zaworski; Jeannette Briggs; Jordan Penic
Subject: RE: Briefing DMO/MO - DER

If anyone else has some good material to draw on please send to Ali. Based on the topics identified, as Ali mentioned, work on the DER Strategy has most of these covered (Bashir – could probably use some material on forecasts for net metering from potential studies).

Dave – are you going to schedule some time to have a quick group discussion – perhaps tomorrow afternoon as a check-in?

Thanks,
Darryl

From: Bashir Bhana
Sent: November 21, 2017 8:34 AM
To: Ali Golriz; David Barrett; Darryl Yahoda; Robert Sinclair; Edward Arlitt; Adam Butterfield; Richard Duffy
Cc: Barbara Ellard; Richard Zaworski; Jeannette Briggs; Jordan Penic
Subject: Re: Briefing DMO/MO - DER

That works for me. Happy to work with you on this. If you'd like to take a first stab at it, I can feed in content. Thanks.

Bashir

Bashir Bhana, P.Eng.
Manager, Resource Integration |
Planning, Acquisition, Operations | IESO

Sent from my BlackBerry

From: Ali.Golriz@ieso.ca
Sent: November 21, 2017 8:26 AM
To: david.barrett@ieso.ca; Darryl.Yahoda@ieso.ca; Robert.Sinclair@ieso.ca; edward.arlitt@ieso.ca; Adam.Butterfield@ieso.ca; Richard.Duffy@ieso.ca; Bashir.Bhana@ieso.ca
Cc: Barbara.Ellard@ieso.ca; richard.zaworski@ieso.ca; jeannette.briggs@ieso.ca; jordan.penic@ieso.ca
Subject: RE: Briefing DMO/MO - DER

Hi all,

In developing the internal (draft) DER Strategy, we have lots of existing material to draw from for all of the items below, except for forecasts for net metering uptake which I understand Bashir and his team are working on.

Happy to put together the deck for the briefing, if that works for everyone.

Thanks,

Ali

From: David Barrett

Sent: November 21, 2017 8:10 AM

To: Darryl Yahoda; Ali Golriz; Robert Sinclair; Edward Arlitt; Adam Butterfield; Richard Duffy; Bashir Bhana

Cc: Barbara Ellard; Richard Zaworski; Jeannette Briggs; Jordan Penic

Subject: Briefing DMO/MO - DER

All, we've been asked to brief the DMO/MO on **Nov 27** on DERs, including :

- Setting context of what "DER" is
- What is currently installed in Ontario
- Challenges/opportunities for the IESO, Risks / Opportunities for increased uptake
- Jurisdictional scan – how Ontario compares to other jurisdictions in Canada / North America
- Forecasts for net metering
- Other implications or considerations we should prepare to advise the Ministry of

We can draw on existing materials used for the DER WG, Grid LDC Coord, Dx connected renewables, LTEP initiatives linkages, status of NM assessment, NERC DERTF, IRC ETTF, Dx connected storage under contract, etc. This is a foundational, no decisions needed, 45min meeting, so should not require too much indepth for now. We should expect, however, that this is followed by a Minister's briefing.

I'm thinking it will be good to have a chat to coordinate as materials come together, including who takes the lead on compiling materials from all corners, and a tight group to attend a briefing. Materials, unfortunately, are **due Nov 23**.

Thanks,

David