Loyer, Joe@Energy

From: Jon McHugh [jon@mchughenergy.com]
Sent: Thursday, July 31, 2014 2:27 PM
To: Loyer, Joe@Energy; Brook, Martha@Energy; Ownby, Adrian@Energy
Cc: Hauenstein, Heidi (hhauenstein@energy-solution.com); Brian Horii (brian@ethree.com); Cathy Chappell (CChappell@trcsolutions.com); Ferris, Todd@Energy; Geiszler, Eurlyne@Energy; Pennington, Bill@Energy
Subject: Demand factors confirmed

Joe,

Thanks for confirming that the demand factors are approved for use.

Both Heidi and I circulated the mid case TDV's (2017_TDV_Mid_20140701-summary.xlsx) with an extra column (column S) in each of the electricity tabs with the demand factor for the correct time period. Thus the 30 year demand factors are on the 30 year res and nonres electricity tabs and the 15 year demand factors are on the 15 year Nonres electricity tab. Heidi sent the file to this group on Tuesday so I won't resend all 9 MB of it again and clog up everyone's mailboxes.

The other spreadsheet (DemandCalc-v1.xlsx) with columns AS and AT are for your use so you can see how the values were calculated. For simplicity I think it is just easier to circulate 2017_TDV_Mid_20140701-summary.xlsx as it is less likely to result in application errors.

In terms of the units, even though it is a ratio – how it is applied is as factor to convert kWh to kW, as it is that hour's contribution to peak demand. However this is not used in a hand calculation. In a spreadsheet or in simulation software these hourly factors are multiplied by the hourly kWh results from an annual simulation to provide a system coincident peak demand impact over the course of a year. Thus on the "Elec Res (30 Year)" tab, the column header on column S which contains the demand factors reads: "Electric Demand Factors All CZ 30 yr (kW/kWh).

I will be sending you the one page write-up which I will run by E3 first.

Could you also confirm that the 2017_TDV_Mid_20140701.xlsx are the approved TDV factors?

I downloaded these from the website but I am not aware there has been any definitive confirmation that these are indeed the approved 2016 T-24 TDVs.

Thanks,

Jon McHugh, PE
McHugh Energy Consultants Inc.
Tel. 916.966.8600
e-mail jon@mchughenergy.com
internet **www.mchughenergy.com**

From: Loyer, Joe@Energy [mailto:Joe.Loyer@energy.ca.gov]
Sent: Thursday, July 31, 2014 11:35 AM
To: Jon McHugh; Brook, Martha@Energy; Ownby, Adrian@Energy
Cc: Hauenstein, Heidi (hhauenstein@energy-solution.com); Brian Horii (brian@ethree.com); Cathy Chappell (CChappell@trcsolutions.com); Ferris, Todd@Energy; Geiszler, Eurlyne@Energy; Pennington, Bill@Energy
Subject: RE: You guys are gumming up the works - please make a decision on demand factors

To All,
I've reviewed Jon's approach thoroughly and I confirmed that Jon pulled the all requisite numbers from the 2016 TDV Calculator, has made the calculations as recommended by Brian Horii and there appear to be no error. I'm comfortable recommending this methodology for the purposes of evaluating the capacity impacts of energy efficiency measures for the 2016 Standards in the CASE Reports.

Please remember to use the appropriate values (either 15 year or 30 year) in columns AS and AT respectively; also remember that these are unit-less factors so watch your unit conversions.

Jon, I would like you to write "how to use these factors" one-page document.
I'll post both on our "documents relied on" page.

Thanks (to everyone),
-Joe

From: Jon McHugh [mailto:jon@mchughenergy.com]
Sent: Wednesday, July 30, 2014 6:10 PM
To: Brook, Martha@Energy; Ownby, Adrian@Energy; Loyer, Joe@Energy
Cc: Hauenstein, Heidi (hhauenstein@energy-solution.com); Brian Horii (brian@ethree.com); Cathy Chappell (CChappell@trcsolutions.com)
Subject: You guys are gumming up the works - please make a decision on demand factors

Hi Martha, Adrian and Joe,

As you can see from the e-mail below we have at least one contractor that is not updating TDVs in the CASE reports until they hear back from you that you have definitively approved the demand factors and the TDV's. No one wants to do something twice.

I look forward to your prompt reply. :)

If you have any questions what I did - it is contained in the attached spreadsheet for the demand factors. I then took these demand factors and copied them into the midcase TDV spreadsheet. Column S as Heidi indicates below.

I used the methodology suggested by Brian Horii at E3 - he looked it over - and fixed my mistake. I used the corrected result. The methodology is described at the very bottom of this e-mail string. If you have any detailed questions please contact Brian Horii (cc'ed here) his phone number is: (415) 391-5100.

Thanks,

Jon McHugh, PE
McHugh Energy Consultants Inc.
Tel. 916.966.8600
e-mail jon@mchughenergy.com
internet http://mchughenergy.com

From: Douglass-Jaimes, David [mailto:DDouglass-Jaimes@trcsolutions.com]
Sent: Wednesday, July 30, 2014 5:32 PM
To: Michael McGaraghan; Jon McHugh

Cc: Heidi Hauenstein
Subject: RE: Res proposal and JA-8 & JA-10

Jon, Mike,

Attached please find the version with my edits to sections 4 and 5 to clarify the questions that Simon and I discussed this afternoon.

I have not revised any of the TDV calculations at this time, since it is my understanding that the demand factors are not yet final. I want to avoid repeating the work in case anything changes.

Jon, is it still your plan to compile all the versions and send to Heidi?

Thanks,

David Douglass-Jaimes, LC, LEED AP BD+C
Project Manager
ddouglass-jaimes@trcsolutions.com

436 14th Street, Suite 1020, Oakland, CA 94612

O: 916.962.7001| D: 916.844.1098
LinkedIn | Twitter | Blog | Flickr | www.trcsolutions.com

Formerly: **Heschong Mahone Group.** Merged with TRC on 1/1/2013. Please update email address (above).

From: Heidi Hauenstein [mailto:hhauenstein@energy-solution.com]
Sent: Tuesday, July 29, 2014 5:28 PM
To: Joe.Loyer@energy.ca.gov
Cc: Martha Brook; peter.strait@energy.ca.gov; Eurlyne Geiszler (Eurlyne.Geiszler@energy.ca.gov); Shirakh, Maziar@Energy (Maziar.Shirakh@energy.ca.gov); Ferris, Todd@Energy (Todd.Ferris@energy.ca.gov); Jon McHugh; Chappell, Catherine; Rasin, Joshua (JRasin@trcsolutions.com); Stu Tartaglia; MBH9@pge.com; 'Randall Higa'; 'ASalas2@semprautilities.com' (ASalas2@semprautilities.com); Lovell B. Willmore (LWillmore@semprautilities.com); 'Kemper, James M.' (James.Kemper@ladwp.com); brian@ethree.com
Subject: Requesting CEC Approval to Use Demand Factors in Attached Spreadsheet

Joe,

You already received this spreadsheet from Jon McHugh earlier today. I am resending the spreadsheet with others from the CEC and utility teams copied so everybody can stay in the loop.

Jon McHugh and E3 have come up with a set of demand factors to use to calculate peak demand savings. See column S in the tabs called “Elec Res (30 Year)” and “Elec Non-Res (15 Year)” for the demand factors. **Can you please confirm that we can use these demand factors in our CASE analyses?**

We would use the demand factors in the 30 year tab for all residential measures and nonresidential envelope measures. We would use the demand factors in the 15 year tab for all nonresidential measures except nonresidential envelope measures.

Thank you,

Heidi
ph: (510) 482-4420 x219
c: (970) 390-4607

From: Jon McHugh [mailto:jon@mchughenergy.com]
Sent: Tuesday, July 29, 2014 12:42 PM
To: Brian Horii; Eric Cutter; Hauenstein, Heidi (hhauenstein@energy-solution.com); Cathy Chappell (CChappell@trcsolutions.com); Abhijeet Pande (APande@trcsolutions.com); Contoyannis, Dimitri (DContoyannis@archenergy.com); Ken Nittler (ken@enercomp.net)
Cc: Snuller Price
Subject: RE: TDV spreadsheet with Summary Sheet

Hi Brian,

I think I did what you suggest for the more detailed calc could you or someone on your team make sure I did not boff this approach and that I selected the correct generation capacity costs (you had a number of different flavors in your spreadsheet). The source of the data is labelled at the top of each source.

Note that the demand factors are in columns AS and AT - one for a 15 year period of analysis and another for a 30 year period of analysis.

Jon McHugh, PE
McHugh Energy Consultants Inc.
Tel. 916.966.8600
e-mail jon@mchughenergy.com
internet http://mchughenergy.com

From: Brian Horii [mailto:brian@ethree.com]
Sent: Tuesday, July 22, 2014 12:15 PM
To: Eric Cutter; Jon McHugh; Hauenstein, Heidi (hhauenstein@energy-solution.com); Cathy Chappell (CChappell@trcsolutions.com); Abhijeet Pande (APande@trcsolutions.com); Contoyannis, Dimitri (DContoyannis@archenergy.com); Ken Nittler (ken@enercomp.net)
Cc: Snuller Price
Subject: RE: TDV spreadsheet with Summary Sheet

Hi Jon,

Here are the answers to your other questions

To generate an estimate of system peak kW demand reduction should we be multiplying the hourly electricity savings by the numbers in the "CapAlloc" tab of the TD_2014Update4_v1j.xlsm spreadsheet? --- Yes

Is this independent of CZ and market segment (res vs. nonres)? --- Yes

Should we just average across the years and then normalized back to a total of 1? Should we be applying a 3% discount rate across the years first and then take the averaged for each hour and then normalize so that we get a total of 1 over the course of the year? Or is there a different source and a different calculation method for generating these hourly factors for calculating a system peak demand reduction?

--- The discounting question is a bit tricky because the factors vary by year.

For just a pure average, I would not discount, just average across years and normalize.

If, however, you want to reflect the relative value of the system peak reductions, then I would do the discounting at 3%, but also throw in the generation capacity unit costs (see Market Dynamics tab) for each year. To get back to a peak kW

number, you would want to divide a) the NPV of the generation capacity savings by b) the NPV of generation capacity unit costs.

-Brian