Fresh Energy
408 Saint Peter Street, Suite 220
Saint Paul, MN 55102
PHONE 651 225 0878
EMAIL info@fresh-energy.org
WEBSITE fresh-energy.org

July 24, 2019

Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

RE: In the Matter of the Petition of Northern States Power Company, dba Xcel Energy, for Approval of Its Proposed Community Solar Garden Program
Docket No. E002/M-13-867

Dear Mr. Wolf:

Fresh Energy submits the attached Public Responses to Fresh Energy Information Requests 10, 18, 19, 20, 21, and 22 to the Minnesota Public Utilities Commission in Docket No. E002/M-13-867. Information Requests 10, 20, and 22 were mentioned and inadvertently omitted from our July 19, 2019 comments. Information Requests 18, 19, and 21 also concern the Value of Solar avoided distribution cost methodology and may be relevant to the issues currently under consideration.

Please contact me at (651) 294-7148 or ricker@fresh-energy.org if you have any questions regarding this filing.

/s/ Isabel Ricker
Isabel Ricker
Fresh Energy
408 St. Peter Street, Suite 220
St. Paul, MN 55102
651.294.7148
ricker@fresh-energy.org

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Xcel Energy
Docket No.: E002/M-13-867
Response To: Fresh Energy Information Request No. 10
Requestor: Allen Gleckner
Date Received: October 12, 2017

Question:

Re: VOS Compliance Filing, Attachment B – Distribution Capacity Cost:

Regarding the "location-specific" distribution capacity cost calculations

a) Please describe how Xcel developed the nine distribution planning areas, including how this process complies with the Value of Solar Methodology's direction that "The distribution cost VOS should be calculated for each distribution planning area, defined as the minimum area in which capacity needs cannot be met by transferring loads internally from one circuit to another."[1]

b) Please explain how Xcel determined the percentage of planning area investment that is "capacity-related". Is this method consistent with the class cost of serve study provided in the most recent rate case?

c) For the "system-wide" distribution capacity cost component, the historical 10-year peak demand growth rate (in kw) is calculated for the years 2007-2016. For the distribution capacity cost component for the nine planning areas, the historical 10-year peak demand growth rate (in kw) is calculated for the years 2010-2019, where 2018 and 2019 are estimates. Please explain why Xcel is using different date ranges for determining historical 10-year peak growth.

[1] At 36.

Response:

a) The Value of Solar calculations were based on the distribution planning areas which are generally defined geographically and have been in place for 20+ years. The distribution planning areas align with our service center areas for the most part but there are some variances. Service center areas are defined geographically and have engineering, design, construction and other resources assigned to them. The distribution planning areas are defined by substation and some substation feeders will cross over more than one service center area. Given that most of our territory can transfer load from one circuit to another, defining distribution planning areas as the minimum area in which capacity needs cannot be met by transferring loads would not result in additional planning areas. In addition, costs more granular than the areas provided are not available.

b) As can be found by referring to the live copy of Attachment B – 2018 Distribution Capacity Values that was submitted with our October 2nd filing in this docket, the percentages referenced in the question are calculated by dividing the Capacity Related Project Cost (column F) by Total Distribution project costs (column D). This formula is represented generally at the top of the percentage calculation column. To find the cell inputs for each specific percentage, its formula can be found by clicking on the Excel cell containing the percentage.

   Individual distribution projects costs are not broken out by type (capacity related or otherwise) in the CCOSS. Overall, distribution project costs by customer type (primary and secondary) are categorized as customer related or capacity related categories via the minimum distribution study for general rate design guidance. In this application, the term capacity is used in a more general rate design context. In the context of the VOS, the term capacity-related serves as a description to determine which project costs are deferrable by solar and this determination must be done on a project-by-project basis.

   As per our planning process, distribution planning identifies risks on the system where we need more capacity and proposes distribution capacity projects to solve those risks. The capacity projects that distribution planning initiates are under the Electric and/or Substation Capacity Program budget types in our budget system. We were able to utilize this standard planning and budgeting process for the VOS.

c) The Company interpreted the Department's methodology as requiring different date ranges for the two methodologies. On page 34 of the Department's

methodology for system wide avoided costs, it refers to using actual data from each of the last 10 years. Then, on page 37 of the Department's methodology for location specific avoided costs, it refers to using budgetary engineering cost estimates for the planning horizon. Our planning horizon is three years. The Company communicated the guidance employed in calculating the system-wide and location-specific distribution values in the Company's cover letter of the 2018 VOS submission. Below is the excerpt from our cover letter of the 2018 VOS submission.

Selected text from the Company's 2018 VOS cover letter:

Attachment B contains the calculation of the avoided distribution capacity, including location-specific avoided costs per ordering point 4 of the Commission's September 6, 2016 Order in this docket. The company employs historical cost and peak demand data for the system-wide method and uses a combination of historical and forecast cost and peak demand data to comply with the location-specific method as indicated by the methodology. To create the location-specific avoided distribution cost the Company employed the following references from the VOS Methodology.

From page 36 of the Department's VOS Methodology[2]:

System-wide Avoided Costs
"Cost per unit growth ($ per KW) is calculated by taking all of the total deferrable cost for each year adjusting for inflation, and dividing by the KW increase in peak annual load over the 10 years"

Location-Specific Avoided Costs
"When calculating the location-specific costs, the calculation should follow the same method of the system-wide avoided cost method, but use local technical and cost data.

- "The distribution cost VOS should be calculated for each distribution planning area…"
- "Anticipated capital costs should be evaluated based on capacity related investments only (as above) using budgetary engineering cost estimates…"

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[2] Docket No. E999/M-14-65; IN THE MATTER OF ESTABLISHING A DISTRIBUTED SOLAR VALUE METHODOLOGY UNDER MINN. STAT.§ 216B.164, SUBD. 10 (E) AND (F); Minnesota Value of Solar: Methodology (Department); April 2, 2014.

Preparer: Meghan Tisdell/Nick Paluck
Title: Senior Engineer/Rate Consultant
Department: System Planning Minnesota/Regulatory Analysis
Telephone: 763.493.1850/612.330.2905
Date: October 23, 2017

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Xcel Energy Information Request No. 18

Docket No.: E002/M-13-867
Response To: Fresh Energy
Requestor: Isabel Ricker
Date Received: May 7, 2019

Question:
Reference: Xcel Compliance Filing, Docket 13-867, May 1, 2019

Please provide a live Excel spreadsheet listing the system-wide distribution projects included in the methodology timeframe for the 2019 VOS vintage with columns for the cost of each project, how much of project cost is capacity-related, and if a project has been identified as deferrable or as driven by one of the categories excluded from "the deferrable capacity-related project list" referenced on page 10 of your May 1, 2019 Compliance Filing:

- Asset heath,
- Equipment failure,
- Large customer requirements,
- Transmission requirements, and
- Reliability requirements.

For example, see Table 14 in the Minnesota Value of Solar Methodology, which includes the information requested above except for whether the project has been deemed deferrable or is driven by one of the reasons above. Please add a column that notes "deferrable" or the specific category the project falls under, for all of the capacity-related distribution projects in this spreadsheet.

Response:
Please see Attachment A to this response, provided as a live Excel spreadsheet.

Preparer: Meghan Tisdell
Title: Senior Engineer
Department: System Planning MN
Telephone: 763-493-1850
Date: May 17, 2019

Project Title	2016	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No
Inst 13.8kV Hiawatha #1 50MVA	348	Capacity	Capacity	Capacity	Yes
Install 13.8kV Oakland #1 50MVA	3,847	Capacity	Capacity	Capacity	Yes
Indiana-IDA064 UG Feeder	11,957	Capacity	Capacity	Capacity	Yes
New ELP feeder	31,192	Capacity	Capacity	Customer driven	No
New ELP feeder bay	406,643	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	54,827	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	2,013	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	13,382	Capacity	Capacity	Customer driven	No
Add LTC Control at 5th St. Sub	466,330	Capacity	Asset Health	Asset Health	No
CUSTOMER ID REDACTED	326,510	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	199,998	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	227,917	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	947,218	Capacity	Capacity	Customer driven	No
SSI: Install Waconia TR2 and fdrs	15,760	Capacity	Capacity	Capacity	Yes
Install new sub Lake Bavaria	4,681,163	Capacity	Capacity	Capacity	Yes
Install feeder at new Hazeltine sub	2,852,482	Capacity	Capacity	Capacity	Yes
T: DCP spend for TAM work at BLC	321,076	Capacity	Capacity	Transmission driven	No
Land for Lake Bavaria Sub	1,433	Capacity	Capacity	Capacity	Yes
BUDG-Install 2nd feeder bay at Plat	63,072	Capacity	Capacity	Customer driven	No
Install Cap Bank at Crystal Foods	239	Capacity	Capacity	Transmission driven	No
Add 28MVA WASTR3 and 1 fdr	1,033	Capacity	Capacity	Capacity	Yes
Reinforce Lake Emily TR1 to 14MVA	11	Capacity	Capacity	Capacity	No
Reinforce Sibley Park Feeder Exits	4	Capacity	Capacity	Capacity	Yes
Install Eastwood 081 and 082	1,170,018	Capacity	Capacity	Capacity	Yes
Add 50MVA Eastwood TR3 and feeders	1,538,685	Capacity	Capacity	Capacity	Yes
Reinf 13.8kV BCR #1 50MVA	5,095	Capacity	Capacity	Capacity	Yes
Convert Hollydale Sub to 115kV	4,014	Capacity	Capacity	Transmission driven	No
Install tie for BRP063	114,780	Capacity	Capacity	Capacity	Yes
Reconfigure ties for TWL079	301,034	Capacity	Capacity	Capacity	Yes
Reconfigure ties on TWL feeders	475,018	Capacity	Capacity	Capacity	Yes
Extend IDA064 to relieve TWL064	391,292	Capacity	Capacity	Capacity	Yes
Install new RRK TR3 Feeder	72,566	Capacity	Capacity	Capacity	Yes
Install Vermillion River feeder VMR063	(512)	Capacity	Capacity	Capacity	Yes
Install DBL082 OH feeder	7,545	Capacity	Capacity	Capacity	Yes
Extend DBL074 and Reconfigure	377	Capacity	Capacity	Capacity	Yes
New First Lake sub	348,784	Capacity	Capacity	Capacity	Yes
Upgrade Freeport sub to 12.5kV	159	Capacity	Asset Health	Asset Health	No
New First Lake feeder FSL311	21,164	Capacity	Capacity	Capacity	Yes
Land for new First Lake Sub	110	Capacity	Capacity	Capacity	Yes
Instl second bank Fiesta City	2,004,092	Capacity	Capacity	Capacity	Yes
Remove and Retire Empire Park substatio	13,464	Capacity	Asset Health	Asset Health	No
Install new feeder MNI073	65	Capacity	Capacity	Customer driven	No
Install new feeder at RAM	(1,413)	Capacity	Capacity	Capacity	Yes
Install new feeder at RAM	5,433	Capacity	Capacity	Capacity	Yes
Install #2 28 MVA 115/13.8kV at Baytown	1,897,031	Capacity	Capacity	Capacity	Yes
Inst BYT#2 28 MVA OH Fdrs	17,006	Capacity	Capacity	Capacity	Yes

Project Title	2017	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No
New ELP feeder bay	16,107	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	11,103	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	5,547	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	(18,925)	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	406,837	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	383,620	Capacity	Capacity	Customer driven	No
SSI: Install Waconia TR2 and fdrs	2,054,528	Capacity	Capacity	Capacity	Yes
SSI: Install new WCS fdr on WCS TR2	707,594	Capacity	Capacity	Capacity	Yes
Install new sub Lake Bavaria	155,153	Capacity	Capacity	Capacity	Yes
Install feeder at new Hazeltine sub	111,849	Capacity	Capacity	Capacity	Yes
T: DCP spend for TAM work at BLC	(335)	Capacity	Capacity	Transmission driven	No
Land for Lake Bavaria Sub	1,562	Capacity	Capacity	Capacity	Yes
BUDG-Install 2nd feeder bay at Plat	498,707	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	385,767	Capacity	Capacity	Customer driven	No
Reinforce GNL072 equipment in sub	5,312	Capacity	Capacity	Capacity	Yes
Install Cap Bank at Crystal Foods	(50)	Capacity	Capacity	Transmission driven	No
Install Eastwood 081 and 082	55,013	Capacity	Capacity	Capacity	Yes
Add 50MVA Eastwood TR3 and feeders	4,328	Capacity	Capacity	Capacity	Yes
Add Dundas 072 Feeder Bay-sub	242,948	Capacity	Capacity	Capacity	Yes
Add Dundas 072 Feeder	6,193	Capacity	Capacity	Capacity	Yes
Add Crystal Foods 62 Feeder	952,226	Capacity	Capacity	Capacity	Yes
Convert Hollydale Sub to 115kV	501,197	Capacity	Capacity	Transmission driven	No
Reconfigure ties for TWL079	(212,090)	Capacity	Capacity	Capacity	Yes
Reconfigure ties on TWL feeders	(454)	Capacity	Capacity	Capacity	Yes
Reconfigure feeder ties CNC073	411,159	Capacity	Capacity	Capacity	Yes
Extend IDA064 to relieve TWL064	32,440	Capacity	Capacity	Capacity	Yes
Install new RRK TR3 Feeder	3,046	Capacity	Capacity	Capacity	Yes
New South Afton Substation and feeders	367,662	Capacity	Capacity	Major capacity project	No
Install DBL082 OH feeder	47	Capacity	Capacity	Capacity	Yes
New First Lake sub	(6,363)	Capacity	Capacity	Capacity	Yes
New First Lake feeder FSL311	(28,707)	Capacity	Capacity	Capacity	Yes
Instl second bank Fiesta City	7,977	Capacity	Capacity	Capacity	Yes
Remove and Retire Empire Park substation	(77,961)	Capacity	Asset Health	Asset Health	No
Reinforce Lowry TR1, replace regulators	1,071,322	Capacity	Capacity	Capacity	Yes
Install 2nd tansformer at Sauk River	5,635	Capacity	Capacity	Capacity	Yes
Install #2 28 MVA 115/13.8kV at Baytown	3,613,144	Capacity	Capacity	Capacity	Yes
Inst BYT#2 28 MVA OH Fdrs	1,076,341	Capacity	Capacity	Capacity	Yes

Project Title	2018 YE FCST	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No
CUSTOMER ID REDACTED	(500,000)	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	(500,000)	Capacity	Capacity	Customer driven	No
CUSTOMER ID REDACTED	(66,873)	Capacity	Capacity	Customer driven	No
TER065, extend TER073 to provide load re	18,402	Capacity	Capacity	Capacity	Yes
CUSTOMER ID REDACTED	(472)	Capacity	Capacity	Customer driven	No
MEL073,Cut load to MEL065	100,307	Capacity	Capacity	Capacity	Yes
Crosstown new 13.8kv Sub	1,575	Capacity	Capacity	Major capacity project	No
CUSTOMER ID REDACTED	89,785	Capacity	Capacity	Customer driven	No
Install new sub Lake Bavaria	(10,257)	Capacity	Capacity	Capacity	Yes
Install new WCS fdr on WCS TR2	584,396	Capacity	Capacity	Capacity	Yes
Install 2nd feeder bay at Plat	3,049	Capacity	Capacity	Customer driven	No
Install stepdown tie GSL65-GSL342	182,871	Capacity	Capacity	Capacity	Yes
Install WCS TR2 and 2 fdr bays	1,128,572	Capacity	Capacity	Capacity	Yes
Reinforce GNL072 feeder exit	178,621	Capacity	Capacity	Capacity	Yes
Reinforce HYL feeder exits	809,629	Capacity	Capacity	Capacity	Yes
Reinforce GNL072 equipment in sub	468,921	Capacity	Capacity	Capacity	Yes
CUSTOMER ID REDACTED	(370,991)	Capacity	Capacity	Customer driven	No
Add Crystal Foods 62 Feeder	(1,467)	Capacity	Capacity	Capacity	Yes
Add Eastwood TR3	1,373,708	Capacity	Capacity	Capacity	Yes
Add new 23.9kV feeder at WAT	690,000	Capacity	Asset Health	Asset Health	No
Reconductor Credit River 31	0	Capacity	Capacity	Capacity	Yes
Add 2nd 23.9kV Transformer and	610,234	Capacity	Asset Health	Asset Health	No
Add Dundas 072 Feeder Bay	300,631	Capacity	Capacity	Capacity	Yes
Add Dundas 072 Feeder-dist	624,990	Capacity	Capacity	Capacity	Yes
Reconfigure feeder ties CNC073	(7,553)	Capacity	Capacity	Capacity	Yes
Install a 50MVA 115/13.8 kV tr	99,049	Capacity	Capacity	Transmission driven	No
Reconfigure TWL067 feeder taps	32,000	Capacity	Capacity	Capacity	Yes
Install Lone Oak 93-81 Tie	430,000	Capacity	Capacity	Capacity	Yes
Extend ALK064 Feeder	350,000	Capacity	Capacity	Capacity	Yes
Add feeder WBP062	350,000	Capacity	Capacity	Capacity	Yes
Build New CHE065 Feeder Bay	995	Capacity	Capacity	Capacity	Yes
Land for S. Afton sub	6,528	Capacity	Capacity	Major capacity project	No
Install new South Washington ERU Sub	20,149	Capacity	Capacity	Major capacity project	No
Transfer WES062 load to WES063	200,000	Capacity	Capacity	Capacity	Yes
Install 35KV xfmr Salida Crossing	1,713,789	Capacity	Capacity	Customer driven	No
Install New Feedr at Sauk River #2	579,948	Capacity	Capacity	Capacity	Yes
Instl second bank Fiesta City	(5,841)	Capacity	Capacity	Capacity	Yes
Retire EMPsub- Reroute 34.5kV	75,000	Capacity	Asset Health	Asset Health	No
Salida Crossing feeder SDX311	500,000	Capacity	Capacity	Customer driven	No
New First Lake sub	58,115	Capacity	Capacity	Capacity	Yes
Atwater Replace ATW062 Breaker	614	Capacity	Capacity	Customer driven	No
Install 2nd tansformer at Sauk River	1,901,974	Capacity	Capacity	Capacity	Yes
Reinforce Lowry TR1, replace regulators	480,537	Capacity	Capacity	Capacity	Yes
Inst BYT#2 28 MVA OH fdrs	(10,524)	Capacity	Capacity	Capacity	Yes
Move HUG321-WYO032 sd xfmr and conver	150,000	Capacity	Capacity	Capacity	Yes
Inst BYT#2 28 MVA	10,727	Capacity	Capacity	Capacity	Yes

Project Title	2019	2020	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No
Hiawatha West HWW TR02 install	$0	$100,000	Capacity	Capacity	Capacity	Yes
Crosstown new 13.8kv sub 2 fdrs	$500,000	$1,200,000	Capacity	Capacity	Major capacity project	No
Crosstown new 13.8kv sub 2 fdrs	$100,000	$3,350,000	Capacity	Capacity	Major capacity project	No
ELP84 - cut to HWW61	$0	$250,000	Capacity	Capacity	Capacity	Yes
TER065, extend TER073 to provide load relief	$0	$150,000	Capacity	Capacity	Capacity	Yes
TER066, Extend MST074	$0	$350,000	Capacity	Capacity	Capacity	Yes
Reinforce WSG feeder capacities	$0	$250,000	Capacity	Capacity	Capacity	Yes
Reinforce WSG feeder capacities	$0	$300,000	Capacity	Capacity	Capacity	Yes
Upgrade SAV063 and SAV067 feeder capacities	$0	$100,000	Capacity	Capacity	Capacity	Yes
SSI: Install 12.47kV Zumbrota #2	$0	$100,000	Capacity	Capacity	Capacity	Yes
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 feeder	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 feeder	$0	$400,000	Capacity	Capacity	Capacity	Yes
Reinforce Kasson TR1 and Fdrs	$0	$100,000	Capacity	Capacity	Capacity	Yes
Upgrade Medford Junction TR1 to 14MVA	$100,000	$2,200,000	Capacity	Capacity	Capacity	Yes
Upgrade VESTR1 and add VES022	$0	$100,000	Capacity	Capacity	Capacity	Yes
Convert Hollydale Sub to 115kV	$1,500,000	$5,000,000	Capacity	Capacity	Transmission driven	No
Convert Hollydale Sub to 115kV	$1,500,000	$3,000,000	Capacity	Capacity	Transmission driven	No
Add 70MVA 115/34.5kV Rosemount TR2	$100,000	$1,100,000	Capacity	Capacity	Capacity	Yes
Add STY TR3 and two new feeders	$0	$1,600,000	Capacity	Capacity	Capacity	Yes
Add STY TR3 and two new feeders	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes
New South Afton Substation and feeders	$500,000	$4,000,000	Capacity	Capacity	Major capacity project	No
New South Afton Substation and feeders	$0	$400,000	Capacity	Capacity	Major capacity project	No
TAM - Upgrade RRK TR2	$50,000	$670,000	Capacity	Capacity	Transmission driven	No
New MPK075-GPH061 Feeder Tie	$0	$250,000	Capacity	Capacity	Capacity	Yes
Install 35KV transformer at Salida Crossing	$1,500,000	$0	Capacity	Capacity	Customer driven	No
Install 35KV transformer at Salida Crossing	$1,100,000	$0	Capacity	Capacity	Customer driven	No
Install 2nd tansformer at Sauk River	$600,000	$0	Capacity	Capacity	Capacity	Yes
Install 2nd tansformer at Sauk River	$945,000	$0	Capacity	Capacity	Capacity	Yes
Reinforce SCL TR2 to 70MVA	$2,000,000	$0	Capacity	Capacity	Capacity	Yes
Install new FIC fdr to serve MTV area	$0	$475,000	Capacity	Capacity	Capacity	Yes
Install new FIC fdr to serve MTV area	$0	$500,000	Capacity	Capacity	Capacity	Yes
Reinforce Glenwood sub equipment	$0	$40,000	Capacity	Capacity	Capacity	Yes
Install new KOL feeder to serve OAD	$0	$800,000	Capacity	Capacity	Capacity	Yes
Add 2 New Baytown Feeders	$0	$1,200,000	Capacity	Capacity	Capacity	Yes

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Xcel Energy Information Request No. 19

Docket No.: E002/M-13-867
Response To: Fresh Energy
Requestor: Isabel Ricker
Date Received: May 7, 2019

Question:
Reference: Xcel Compliance Filing, Docket 13-867, May 1, 2019

A. Please provide a table (like those on page 8 of your May 1, 2019 Compliance Filing) showing for the VOS 2019 vintage: System Distribution Cost per kW and Distribution Component Cents per kWh calculated under the proposed cost-based methodology but including all capacity-related distribution projects (e.g. including those driven by Asset heath, Equipment failure, Large customer requirements, Transmission requirements, and Reliability requirements).

B. Please provide a table showing the percentage of 2019 System Distribution Cost per kW calculated in response to Request A that is attributable to each of the following categories of distribution projects: Deferrable, Asset heath, Equipment failure, Large customer requirements, Transmission requirements, and Reliability requirements.

Please do these calculations without the deferral reduction factor.

Response:
A. Please see Attachment A, Part A.

B. Please see Attachment A, Part B.

Preparer:	Nick Paluck	Meghan Tisdell
Title:	Rate Consultant	Senior Engineer
Department:	Regulatory Analysis	System Planning MN
Telephone:	612.330.2905	763.493.1850
Date:	May 17, 2019	

VOS Distribution Capacity Cost per kW

(A) System actual cost per KWH

Year	New Dist. Capacity	Capital Cost - Capacity projects
	(MW)	($M)
2016	196.8	$18.534
2017	56.0	$12.827
2018	80.8	$11.276
2019	139.2	$10.695
2020	122.0	$30.385
Total	594.8	$83.718
Cost per kW		$141

Distribution Cost per kW	$140.75
Deferral reduction factor	50%
Effective Avoided Distribution Cost per kW	$70.37

2016	2017	2018	2019	2020	
$ 18,534,309	$ 12,827,442	$ 11,275,904	$ 10,695,000	$ 30,385,000	Total of all capacity related distribution projects*
86.0%	80.1%	91.2%	36.9%	42.0%	VOS classification: Capacity
12.3%	13.2%	7.7%	24.3%	0.0%	VOS classification: Customer driven
0.0%	2.9%	0.3%	10.3%	29.5%	VOS classification: Major capacity project
1.8%	3.9%	0.9%	28.5%	28.5%	VOS classification: Transmission driven

*Includes all four VOS classifications: Capacity, Customer Driven, Major capacity project, and Transmission driven
Note- Totals do not include VOS classification: Asset Health

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Xcel Energy Information Request No. 20
Docket No.: E002/M-13-867
Response To: Fresh Energy
Requestor: Isabel Ricker
Date Received: May 22, 2019

Question:

Reference: Xcel's responses to Fresh Energy IR 18 and 19

A. RE: Response to IR 18: please add a column to Attachment A that shows the capacity (MW) of each project on this list.

B. RE: Response to IR 18: Xcel's May 1, 2019 Compliance filing states that projects in the following categories are excluded from the "deferrable capacity-related project list": Asset heath, Equipment failure, Large customer requirements, Transmission requirements, and Reliability requirements. Attachment A of your response to IR 18 includes projects under slightly different categories: Asset health, Capacity, Customer driven, Major capacity project, and Transmission driven. Please clarify how these categories map onto those in your May 1 filing and note which category in Attachment A includes projects related to Equipment failure and Reliability requirements.

C. RE: Response to IR 19, Part A: When comparing this table to the table on page 8 of your May 1, 2019 Compliance Filing, it appears that the cost per MW of capacity projects that are not classified as deferrable (e.g. that are customer driven, transmission driven, major capacity projects or related to asset health) is lower than the cost per MW of projects classified as deferrable. Please provide a narrative explanation of why this may be.

D. RE: Response to IR 19, Part B: The portion of VOS-eligible capacity related distribution projects has fallen by about half when comparing 2016-2018 and 2019-2020. Please provide a narrative explanation of why this may be and whether this is a trend you expect to continue.

Response:

A. See attachment. This is added feeder capacity in MW and is based on the project year in-service.

B. The categories identified in the Company's May 1 Compliance filing provided a general and non-exhaustive set of high level categories of deferrable capacity-related projects. The Company provided these general categories in response to Fresh Energy's informal request, and as stated, not from any existing non-VOS business need. In our response to Fresh Energy IR 18, we provided roughly the same information as in our May 1 filing with a finer level of detail. The category descriptors are compared in the table below.

May 1 filing	**IR 18 Response**	**Difference**
Asset Health	Asset Health	Same
Equipment Failure		Not an issue 2016 and onwards. Have improved placing these in the correct budget category/classification.
Large Customer Requirements	Customer driven	Same
Transmission requirements	Transmission driven	Same
Reliability Requirements		Under blankets spend; not included
	Capacity	Fundamentally part of VOS. Called out in IR18 to be as clear as possible
	Major Capacity project	Projects with so large of need it's unlikely that solar would cost effectively defer this. Rarely used.

C. The company has not conducted a project-by-project analysis and therefore cannot draw conclusions.

D. Budget forecasts are set at a point in time and may change in the future and as new information arises.

In the 2020 budget the Company must fund the non-discretionary transmission projects and 2 Major Capacity projects.

Please note, Attachment A to this response contains private data on customers such as the names and addresses of customers. This information is maintained by the Company as private customer data, and for this reason, pursuant to Minn. Stat. §13.679, we have removed this information from this response.

Preparer: Meghan Tisdell
Title: Senior Engineer
Department: System Planning MN
Telephone: 763-493-1850
Date: June 3, 2019

Project Title	2016	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	Added capacity (MW)
Inst 13.8kV Hiawatha #1 50MVA	348	Capacity	Capacity	Capacity	Yes	0.0
Install 13.8kV Oakland #1 50MVA	3,847	Capacity	Capacity	Capacity	Yes	0.0
Indiana-IDA064 UG Feeder	11,957	Capacity	Capacity	Capacity	Yes	0.0
New ELP feeder	31,192	Capacity	Capacity	Customer driven	No	11.9
New ELP feeder bay	406,643	Capacity	Capacity	Customer driven	No	ELP above
REDACTED	54,827	Capacity	Capacity	Customer driven	No	59.7
REDACTED	2,013	Capacity	Capacity	Customer driven	No	0.0
REDACTED	13,382	Capacity	Capacity	Customer driven	No	0.0
Add LTC Control at 5th St. Sub	466,330	Capacity	Asset Health	Asset Health	No	0.0
REDACTED	326,510	Capacity	Capacity	Customer driven	No	0.0
REDACTED	199,998	Capacity	Capacity	Customer driven	No	0.0
REDACTED	227,917	Capacity	Capacity	Customer driven	No	0.0
REDACTED	947,218	Capacity	Capacity	Customer driven	No	0.0
SSI: Install Waconia TR2 and fdrs	15,760	Capacity	Capacity	Capacity	Yes	0.0
Install new sub Lake Bavaria	4,681,163	Capacity	Capacity	Capacity	Yes	LAB below
Install feeder at new Hazeltine sub	2,852,482	Capacity	Capacity	Capacity	Yes	69.6
T: DCP spend for TAM work at BLC	321,076	Capacity	Capacity	Transmission driven	No	0.0
Land for Lake Bavaria Sub	1,433	Capacity	Capacity	Capacity	Yes	LAB above
BUDG-Install 2nd feeder bay at Plat	63,072	Capacity	Capacity	Customer driven	No	0.0
Install Cap Bank at Crystal Foods	239	Capacity	Capacity	Transmission driven	No	0.0
Add 28MVA WASTR3 and 1 fdr	1,033	Capacity	Capacity	Capacity	Yes	0.0
Reinforce Lake Emily TR1 to 14MVA	11	Capacity	Capacity	Capacity	No	0.0
Reinforce Sibley Park Feeder Exits	4	Capacity	Capacity	Capacity	Yes	0.0
Install Eastwood 081 and 082	1,170,018	Capacity	Capacity	Capacity	Yes	26.3
Add 50MVA Eastwood TR3 and feeders	1,538,685	Capacity	Capacity	Capacity	Yes	ESW above
Reinf 13.8kV BCR #1 50MVA	5,095	Capacity	Capacity	Capacity	Yes	0.0
Convert Hollydale Sub to 115kV	4,014	Capacity	Capacity	Transmission driven	No	0.0
Install tie for BRP063	114,780	Capacity	Capacity	Capacity	Yes	0.0
Reconfigure ties for TWL079	301,034	Capacity	Capacity	Capacity	Yes	3.9
Reconfigure ties on TWL feeders	475,018	Capacity	Capacity	Capacity	Yes	9.2
Extend IDA064 to relieve TWL064	391,292	Capacity	Capacity	Capacity	Yes	0.0
Install new RRK TR3 Feeder	72,566	Capacity	Capacity	Capacity	Yes	0.0
Install Vermillion River feeder VMR063	(512)	Capacity	Capacity	Capacity	Yes	0.0
Install DBL082 OH feeder	7,545	Capacity	Capacity	Capacity	Yes	0.0
Extend DBL074 and Reconfigure	377	Capacity	Capacity	Capacity	Yes	0.0
New First Lake sub	348,784	Capacity	Capacity	Capacity	Yes	0.0
Upgrade Freeport sub to 12.5kV	159	Capacity	Asset Health	Asset Health	No	0.0
New First Lake feeder FSL311	21,164	Capacity	Capacity	Capacity	Yes	0.0
Land for new First Lake Sub	110	Capacity	Capacity	Capacity	Yes	0.0
Instl second bank Fiesta City	2,004,092	Capacity	Capacity	Capacity	Yes	16.2
Remove and Retire Empire Park substatio	13,464	Capacity	Asset Health	Asset Health	No	0.0
Install new feeder MNI073	65	Capacity	Capacity	Customer driven	No	0.0
Install new feeder at RAM	(1,413)	Capacity	Capacity	Capacity	Yes	0.0
Install new feeder at RAM	5,433	Capacity	Capacity	Capacity	Yes	0.0
Install #2 28 MVA 115/13.8kV at Baytown	1,897,031	Capacity	Capacity	Capacity	Yes	0.0
Inst BYT#2 28 MVA OH Fdrs	17,006	Capacity	Capacity	Capacity	Yes	0.0

Project Title	2017	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	Added capacity (MW)
New ELP feeder bay	16,107	Capacity	Capacity	Customer driven	No	0.0
REDACTED	11,103	Capacity	Capacity	Customer driven	No	0.0
REDACTED	5,547	Capacity	Capacity	Customer driven	No	0.0
REDACTED	(18,925)	Capacity	Capacity	Customer driven	No	0.0
REDACTED	406,837	Capacity	Capacity	Customer driven	No	0.0
REDACTED	383,620	Capacity	Capacity	Customer driven	No	0.0
SSI: Install Waconia TR2 and fdrs	2,054,528	Capacity	Capacity	Capacity	Yes	0.0
SSI: Install new WCS fdr on WCS TR2	707,594	Capacity	Capacity	Capacity	Yes	0.0
Install new sub Lake Bavaria	155,153	Capacity	Capacity	Capacity	Yes	0.0
Install feeder at new Hazeltine sub	111,849	Capacity	Capacity	Capacity	Yes	0.0
T: DCP spend for TAM work at BLC	(335)	Capacity	Capacity	Transmission driven	No	0.0
Land for Lake Bavaria Sub	1,562	Capacity	Capacity	Capacity	Yes	0.0
BUDG-Install 2nd feeder bay at Plat	498,707	Capacity	Capacity	Customer driven	No	12.7
REDACTED	385,767	Capacity	Capacity	Customer driven	No	0.0
Reinforce GNL072 equipment in sub	5,312	Capacity	Capacity	Capacity	Yes	0.0
Install Cap Bank at Crystal Foods	(50)	Capacity	Capacity	Transmission driven	No	0.0
Install Eastwood 081 and 082	55,013	Capacity	Capacity	Capacity	Yes	0.0
Add 50MVA Eastwood TR3 and feeders	4,328	Capacity	Capacity	Capacity	Yes	0.0
Add Dundas 072 Feeder Bay-sub	242,948	Capacity	Capacity	Capacity	Yes	0.0
Add Dundas 072 Feeder	6,193	Capacity	Capacity	Capacity	Yes	0.0
Add Crystal Foods 62 Feeder	952,226	Capacity	Capacity	Capacity	Yes	12.0
Convert Hollydale Sub to 115kV	501,197	Capacity	Capacity	Transmission driven	No	0.0
Reconfigure ties for TWL079	(212,090)	Capacity	Capacity	Capacity	Yes	0.0
Reconfigure ties on TWL feeders	(454)	Capacity	Capacity	Capacity	Yes	0.0
Reconfigure feeder ties CNC073	411,159	Capacity	Capacity	Capacity	Yes	9.1
Extend IDA064 to relieve TWL064	32,440	Capacity	Capacity	Capacity	Yes	0.0
Install new RRK TR3 Feeder	3,046	Capacity	Capacity	Capacity	Yes	0.0
New South Afton Substation and feeders	367,662	Capacity	Capacity	Major capacity project	No	0.0
Install DBL082 OH feeder	47	Capacity	Capacity	Capacity	Yes	0.0
New First Lake sub	(6,363)	Capacity	Capacity	Capacity	Yes	0.0
New First Lake feeder FSL311	(28,707)	Capacity	Capacity	Capacity	Yes	0.0
Instl second bank Fiesta City	7,977	Capacity	Capacity	Capacity	Yes	0.0
Remove and Retire Empire Park substation	(77,961)	Capacity	Asset Health	Asset Health	No	0.0
Reinforce Lowry TR1, replace regulators	1,071,322	Capacity	Capacity	Capacity	Yes	8.3
Install 2nd tansformer at Sauk River	5,635	Capacity	Capacity	Capacity	Yes	0.0
Install #2 28 MVA 115/13.8kV at Baytown	3,613,144	Capacity	Capacity	Capacity	Yes	BYT below
Inst BYT#2 28 MVA OH Fdrs	1,076,341	Capacity	Capacity	Capacity	Yes	13.9

Project Title	2018 YE FCST	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	Added capacity (MW)
REDACTED	(500,000)	Capacity	Capacity	Customer driven	No	0.0
REDACTED	(500,000)	Capacity	Capacity	Customer driven	No	0.0
REDACTED	(66,873)	Capacity	Capacity	Customer driven	No	0.0
TER065, extend TER073 to provide load re	18,402	Capacity	Capacity	Capacity	Yes	0.0
REDACTED	(472)	Capacity	Capacity	Customer driven	No	0.0
MEL073,Cut load to MEL065	100,307	Capacity	Capacity	Capacity	Yes	0.0
Crosstown new 13.8kv Sub	1,575	Capacity	Capacity	Major capacity project	No	0.0
REDACTED	89,785	Capacity	Capacity	Customer driven	No	0.0
Install new sub Lake Bavaria	(10,257)	Capacity	Capacity	Capacity	Yes	0.0
Install new WCS fdr on WCS TR2	584,396	Capacity	Capacity	Capacity	Yes	21.7
Install 2nd feeder bay at Plat	3,049	Capacity	Capacity	Customer driven	No	0.0
Install stepdown tie GSL65-GSL342	182,871	Capacity	Capacity	Capacity	Yes	0.0
Install WCS TR2 and 2 fdr bays	1,128,572	Capacity	Capacity	Capacity	Yes	WCS above
Reinforce GNL072 feeder exit	178,621	Capacity	Capacity	Capacity	Yes	4.3
Reinforce HYL feeder exits	809,629	Capacity	Capacity	Capacity	Yes	14.3
Reinforce GNL072 equipment in sub	468,921	Capacity	Capacity	Capacity	Yes	GNL above
REDACTED	(370,991)	Capacity	Capacity	Customer driven	No	0.0
Add Crystal Foods 62 Feeder	(1,467)	Capacity	Capacity	Capacity	Yes	0.0
Add Eastwood TR3	1,373,708	Capacity	Capacity	Capacity	Yes	0.0
Add new 23.9kV feeder at WAT	690,000	Capacity	Asset Health	Asset Health	No	0.0
Reconductor Credit River 31	0	Capacity	Capacity	Capacity	Yes	6.6
Add 2nd 23.9kV Transformer and	610,234	Capacity	Asset Health	Asset Health	No	0.0
Add Dundas 072 Feeder Bay	300,631	Capacity	Capacity	Capacity	Yes	15.0
Add Dundas 072 Feeder-dist	624,990	Capacity	Capacity	Capacity	Yes	DND above
Reconfigure feeder ties CNC073	(7,553)	Capacity	Capacity	Capacity	Yes	0.0
Install a 50MVA 115/13.8 kV tr	99,049	Capacity	Capacity	Transmission driven	No	0.0
Reconfigure TWL067 feeder taps	32,000	Capacity	Capacity	Capacity	Yes	0.0
Install Lone Oak 93-81 Tie	430,000	Capacity	Capacity	Capacity	Yes	0.0
Extend ALK064 Feeder	350,000	Capacity	Capacity	Capacity	Yes	0.0
Add feeder WBP062	350,000	Capacity	Capacity	Capacity	Yes	14.9
Build New CHE065 Feeder Bay	995	Capacity	Capacity	Capacity	Yes	0.0
Land for S. Afton sub	6,528	Capacity	Capacity	Major capacity project	No	0.0
Install new South Washington ERU Sub	20,149	Capacity	Capacity	Major capacity project	No	0.0
Transfer WES062 load to WES063	200,000	Capacity	Capacity	Capacity	Yes	0.0
Install 35KV xfmr Salida Crossing	1,713,789	Capacity	Capacity	Customer driven	No	0.0
Install New Feedr at Sauk River #2	579,948	Capacity	Capacity	Capacity	Yes	0.0
Instl second bank Fiesta City	(5,841)	Capacity	Capacity	Capacity	Yes	0.0
Retire EMPsub- Reroute 34.5kV	75,000	Capacity	Asset Health	Asset Health	No	0.0
Salida Crossing feeder SDX311	500,000	Capacity	Capacity	Customer driven	No	0.0
New First Lake sub	58,115	Capacity	Capacity	Capacity	Yes	0.0
Atwater Replace ATW062 Breaker	614	Capacity	Capacity	Customer driven	No	4.0
Install 2nd tansformer at Sauk River	1,901,974	Capacity	Capacity	Capacity	Yes	0.0
Reinforce Lowry TR1, replace regulators	480,537	Capacity	Capacity	Capacity	Yes	0.0
Inst BYT#2 28 MVA OH fdrs	(10,524)	Capacity	Capacity	Capacity	Yes	0.0
Move HUG321-WYO032 sd xfmr and conve	150,000	Capacity	Capacity	Capacity	Yes	0.0
Inst BYT#2 28 MVA	10,727	Capacity	Capacity	Capacity	Yes	0.0

Project Title	2019	2020	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	Added capacity (MW)
Hiawatha West HWW TR02 install	$0	$100,000	Capacity	Capacity	Capacity	Yes	0.0
Crosstown new 13.8kv sub 2 fdrs	$500,000	$1,200,000	Capacity	Capacity	Major capacity project	No	0.0
Crosstown new 13.8kv sub 2 fdrs	$100,000	$3,350,000	Capacity	Capacity	Major capacity project	No	0.0
ELP84 - cut to HWW61	$0	$250,000	Capacity	Capacity	Capacity	Yes	0.0
TER065, extend TER073 to provide load relief	$0	$150,000	Capacity	Capacity	Capacity	Yes	0.0
TER066, Extend MST074	$0	$350,000	Capacity	Capacity	Capacity	Yes	0.0
Reinforce WSG feeder capacities	$0	$250,000	Capacity	Capacity	Capacity	Yes	11.9
Reinforce WSG feeder capacities	$0	$300,000	Capacity	Capacity	Capacity	Yes	WSG above
Upgrade SAV063 and SAV067 feeder capacities	$0	$100,000	Capacity	Capacity	Capacity	Yes	0.0
SSI: Install 12.47kV Zumbrota #2	$0	$100,000	Capacity	Capacity	Capacity	Yes	0.0
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 fe	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes	14.0
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 fe	$0	$400,000	Capacity	Capacity	Capacity	Yes	FAP above
Reinforce Kasson TR1 and Fdrs	$0	$100,000	Capacity	Capacity	Capacity	Yes	0.0
Upgrade Medford Junction TR1 to 14MVA	$100,000	$2,200,000	Capacity	Capacity	Capacity	Yes	0.0
Upgrade VESTR1 and add VES022	$0	$100,000	Capacity	Capacity	Capacity	Yes	0.0
Convert Hollydale Sub to 115kV	$1,500,000	$5,000,000	Capacity	Capacity	Transmission driven	No	0.0
Convert Hollydale Sub to 115kV	$1,500,000	$3,000,000	Capacity	Capacity	Transmission driven	No	0.0
Add 70MVA 115/34.5kV Rosemount TR2	$100,000	$1,100,000	Capacity	Capacity	Capacity	Yes	0.0
Add STY TR3 and two new feeders	$0	$1,600,000	Capacity	Capacity	Capacity	Yes	0.0
Add STY TR3 and two new feeders	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes	0.0
New South Afton Substation and feeders	$500,000	$4,000,000	Capacity	Capacity	Major capacity project	No	AFT below
New South Afton Substation and feeders	$0	$400,000	Capacity	Capacity	Major capacity project	No	69.6
TAM - Upgrade RRK TR2	$50,000	$670,000	Capacity	Capacity	Transmission driven	No	0.0
New MPK075-GPH061 Feeder Tie	$0	$250,000	Capacity	Capacity	Capacity	Yes	0.0
Install 35KV transformer at Salida Crossing	$1,500,000	$0	Capacity	Capacity	Customer driven	No	SDX below
Install 35KV transformer at Salida Crossing	$1,100,000	$0	Capacity	Capacity	Customer driven	No	104.4
Install 2nd tansformer at Sauk River	$600,000	$0	Capacity	Capacity	Capacity	Yes	34.8
Install 2nd tansformer at Sauk River	$945,000	$0	Capacity	Capacity	Capacity	Yes	SAK above
Reinforce SCL TR2 to 70MVA	$2,000,000	$0	Capacity	Capacity	Capacity	Yes	0.0
Install new FIC fdr to serve MTV area	$0	$475,000	Capacity	Capacity	Capacity	Yes	12.6
Install new FIC fdr to serve MTV area	$0	$500,000	Capacity	Capacity	Capacity	Yes	FIC above
Reinforce Glenwood sub equipment	$0	$40,000	Capacity	Capacity	Capacity	Yes	0.0
Install new KOL feeder to serve OAD	$0	$800,000	Capacity	Capacity	Capacity	Yes	13.9
Add 2 New Baytown Feeders	$0	$1,200,000	Capacity	Capacity	Capacity	Yes	0.0

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Xcel Energy Information Request No. 21
Docket No.: E002/M-13-867
Response To: Fresh Energy
Requestor: Isabel Ricker
Date Received: May 22, 2019

Question:

A. Please provide live Excel spreadsheet versions of Xcel's most recently submitted Class Cost of Service Study (CCOSS) and Minimum Distribution Study, with all links and formulas intact. If corrections, updates, or changes have been made to either study, please note them.
B. Please note the Schedule, Attachment, Page and/or line number where total (system-wide) capacity-related distribution costs, as calculated in the CCOSS for a particular year, are located. If the CCOSS as submitted does not include one line for this total, please note the lines with subtotals that would be added to achieve a total of capacity-related distribution costs.

Response:

A. The most recently submitted Class Cost of Service Study (CCOSS) was submitted in Company witness Mr. Michael Peppin's Direct Testimony in Docket No. E002/GR-15-826. The 2016, 2017 and 2018 detailed versions of the CCOSS were included as Schedules 4, 6 and 8, respectively. The "live" version of the CCOSS is considered trade secret and not available for general distribution. The results of the Minimum System study used in the CCOSS were included in Schedule 11 of Mr. Peppin's Direct Testimony, and are provided as Attachment A to this response.
B. The CCOSS does not calculate "system-wide" revenue requirements, but only for the State of Minnesota. In Schedules 4, 6 and 8 of Mr. Peppin's Direct Testimony, the State of Minnesota total capacity-related Distribution Revenue Requirement is shown on page 2, row 36 for the each of the years 2016, 2017 and 2018.

Preparer: Mike Peppin
Title: Principle Pricing Analyst
Department: Regulatory Affairs
Telephone: 612-337-2317
Date: June 3, 2019

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☐ **Public Document – Not Public Data Has Been Excised**
☒ **Public Document**

Xcel Energy Information Request No. 22
Docket No.: E002/M-13-867
Response To: Fresh Energy
Requestor: Isabel Ricker
Date Received: July 2, 2019

Question:
Reference: Xcel Compliance Filing, Docket 13-867, May 1, 2019 and Xcel's Response to Fresh Energy IR 18 in this docket.

A. Please add a column to Attachment A of Xcel's response to Fresh Energy IR 18 showing the FERC account(s) for each distribution project included in this Attachment and the percentage of project cost attributable to each relevant FERC account.
B. What methodology is the Company using to derive the demand-related component of these expenses? Where else does the Company use this same methodology to derive the demand-related component of distribution expenses?
C. What criteria do distribution projects need to meet in order to be identified as deferrable in this filing?
D. What grid services do solar resources need to provide in order to defer distribution projects?
E. Please provide all the workpapers used in calculating the Company's proposed 2019 VOS, including, but not limited to, the avoided distribution capacity component.

Response:
A. Please see Attachment A to this response. Please note, FERC accounts have been provided for all projects with a project cost. The projects that do not have costs assigned do not have a FERC account.
B. Assuming Fresh Energy is referring to Added Capacity rather than demand, the added Capacity is derived from a combination of the planner's knowledge of the system and review of the project. For historical projects, we can view the change in capacity in the forecasting tool for the necessary feeders and review the project scope. The Company's detailed plans for projects in forward years are being developed, therefore the numbers provided at this time are estimates.

This information is not used elsewhere.

C. As per the methodology, the projects must be capacity related. The distribution spend must be under the Capacity program type (in FE-018 we called it Classification) and associated to a specific/discrete capacity project. There may be other projects under the Capacity program type that are driven by other factors such as Asset Health, Major Capacity Project, Transmission Driven, Customer Driven, Reliability, Other, etc. that would not be considered deferrable. To improve transparency of this, our Response to FE IR-18 shows the original classification/program type, new classification, VOS classification, and whether it's "capacity related VOS". As projects are entered into our budgeting tool, the program type is selected. As an example, most discrete capacity projects will solve a specific capacity risk, thus the Capacity program type is selected. Other projects may solve an aging asset risk or failure, so the Asset Health program type is selected. In review of the data for Attachment A we did identify several projects where Capacity was selected and the appropriate classification/program type should have been Asset Health.

D. For any resource (solar or otherwise) to be able to defer a distribution project the alternative solution must meet the need that the intended distribution project would have addressed. Depending on the distribution project, this could include specific requirements relating to operating parameters, reliability and specific hours that it would be available to be dispatched.

E. Please see the following filings made in this docket (E002/M-13-867):
   - 2019 VOS Filing: Submitted August 31, 2018. Workpapers provided as Attachments A-L to that filing.
   - 2019 VOS Reply Comments: Submitted December 13, 2018. Workpapers provided as Attachments A and B to that filing.
   - 2019 VOS Compliance: Submitted March 26, 2019. Workpapers provided as Attachment B to that filing.
   - Avoided Distribution Cost Methodology Compliance: Submitted on May 1, 2019. Workpapers are provided as Attachments A and B to that filing.

Preparer:	Nick Hanson/ Meghan Tisdell/ Nick Paluck
Title:	Accounting Consultant/ Sr. Engineer/ Rate Consultant
Department:	Capital Asset Accounting/ System Planning MN/ Regulatory Affairs
Telephone:	612.330.7850/ 763.493.1850/ 612.330.2905
Date:	July 15, 2019

Project Title	2016	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	FERC Acct
Inst 13.8kV Hiawatha #1 50MVA	348	Capacity	Capacity	Capacity	Yes	362
Install 13.8kV Oakland #1 50MVA	3,847	Capacity	Capacity	Capacity	Yes	362
Indiana-IDA064 UG Feeder	11,957	Capacity	Capacity	Capacity	Yes	365
New ELP feeder	31,192	Capacity	Capacity	Customer driven	No	367
New ELP feeder bay	406,643	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	54,827	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	2,013	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	13,382	Capacity	Capacity	Customer driven	No	366
Add LTC Control at 5th St. Sub	466,330	Capacity	Asset Health	Asset Health	No	362
CUSTOMER ID REDACTED	326,510	Capacity	Capacity	Customer driven	No	366
CUSTOMER ID REDACTED	199,998	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	227,917	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	947,218	Capacity	Capacity	Customer driven	No	367
SSI: Install Waconia TR2 and fdrs	15,760	Capacity	Capacity	Capacity	Yes	367
Install new sub Lake Bavaria	4,681,163	Capacity	Capacity	Capacity	Yes	362
Install feeder at new Hazeltine sub	2,852,482	Capacity	Capacity	Capacity	Yes	365
T: DCP spend for TAM work at BLC	321,076	Capacity	Capacity	Transmission driven	No	362
Land for Lake Bavaria Sub	1,433	Capacity	Capacity	Capacity	Yes	360
BUDG-Install 2nd feeder bay at Plat	63,072	Capacity	Capacity	Customer driven	No	362
Install Cap Bank at Crystal Foods	239	Capacity	Capacity	Transmission driven	No	362
Add 28MVA WASTR3 and 1 fdr	1,033	Capacity	Capacity	Capacity	Yes	362
Reinforce Lake Emily TR1 to 14MVA	11	Capacity	Capacity	Capacity	No	362
Reinforce Sibley Park Feeder Exits	4	Capacity	Capacity	Capacity	Yes	367
Install Eastwood 081 and 082	1,170,018	Capacity	Capacity	Capacity	Yes	367
Add 50MVA Eastwood TR3 and feeders	1,538,685	Capacity	Capacity	Capacity	Yes	362
Reinf 13.8kV BCR #1 50MVA	5,095	Capacity	Capacity	Capacity	Yes	362
Convert Hollydale Sub to 115kV	4,014	Capacity	Capacity	Transmission driven	No	362
Install tie for BRP063	114,780	Capacity	Capacity	Capacity	Yes	367
Reconfigure ties for TWL079	301,034	Capacity	Capacity	Capacity	Yes	367
Reconfigure ties on TWL feeders	475,018	Capacity	Capacity	Capacity	Yes	367
Extend IDA064 to relieve TWL064	391,292	Capacity	Capacity	Capacity	Yes	367
Install new RRK TR3 Feeder	72,566	Capacity	Capacity	Capacity	Yes	365
Install Vermillion River feeder VMR063	(512)	Capacity	Capacity	Capacity	Yes	364
Install DBL082 OH feeder	7,545	Capacity	Capacity	Capacity	Yes	367
Extend DBL074 and Reconfigure	377	Capacity	Capacity	Capacity	Yes	365
New First Lake sub	348,784	Capacity	Capacity	Capacity	Yes	362
Upgrade Freeport sub to 12.5kV	159	Capacity	Asset Health	Asset Health	No	362
New First Lake feeder FSL311	21,164	Capacity	Capacity	Capacity	Yes	367
Land for new First Lake Sub	110	Capacity	Capacity	Capacity	Yes	360
Instl second bank Fiesta City	2,004,092	Capacity	Capacity	Capacity	Yes	362
Remove and Retire Empire Park substatic	13,464	Capacity	Asset Health	Asset Health	No	364
Install new feeder MNI073	65	Capacity	Capacity	Customer driven	No	362
Install new feeder at RAM	(1,413)	Capacity	Capacity	Capacity	Yes	369
Install new feeder at RAM	5,433	Capacity	Capacity	Capacity	Yes	362
Install #2 28 MVA 115/13.8kV at Baytown	1,897,031	Capacity	Capacity	Capacity	Yes	362
Inst BYT#2 28 MVA OH Fdrs	17,006	Capacity	Capacity	Capacity	Yes	367

Project Title	2017	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	FERC Acct
New ELP feeder bay	16,107	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	11,103	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	5,547	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	(18,925)	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	406,837	Capacity	Capacity	Customer driven	No	367
CUSTOMER ID REDACTED	383,620	Capacity	Capacity	Customer driven	No	362
SSI: Install Waconia TR2 and fdrs	2,054,528	Capacity	Capacity	Capacity	Yes	362
SSI: Install new WCS fdr on WCS TR2	707,594	Capacity	Capacity	Capacity	Yes	367
Install new sub Lake Bavaria	155,153	Capacity	Capacity	Capacity	Yes	362
Install feeder at new Hazeltine sub	111,849	Capacity	Capacity	Capacity	Yes	366
T: DCP spend for TAM work at BLC	(335)	Capacity	Capacity	Transmission driven	No	361
Land for Lake Bavaria Sub	1,562	Capacity	Capacity	Capacity	Yes	360
BUDG-Install 2nd feeder bay at Plat	498,707	Capacity	Capacity	Customer driven	No	362
CUSTOMER ID REDACTED	385,767	Capacity	Capacity	Customer driven	No	367
Reinforce GNL072 equipment in sub	5,312	Capacity	Capacity	Capacity	Yes	362
Install Cap Bank at Crystal Foods	(50)	Capacity	Capacity	Transmission driven	No	361
Install Eastwood 081 and 082	55,013	Capacity	Capacity	Capacity	Yes	367
Add 50MVA Eastwood TR3 and feeders	4,328	Capacity	Capacity	Capacity	Yes	362
Add Dundas 072 Feeder Bay-sub	242,948	Capacity	Capacity	Capacity	Yes	362
Add Dundas 072 Feeder	6,193	Capacity	Capacity	Capacity	Yes	364
Add Crystal Foods 62 Feeder	952,226	Capacity	Capacity	Capacity	Yes	362
Convert Hollydale Sub to 115kV	501,197	Capacity	Capacity	Transmission driven	No	362
Reconfigure ties for TWL079	(212,090)	Capacity	Capacity	Capacity	Yes	367
Reconfigure ties on TWL feeders	(454)	Capacity	Capacity	Capacity	Yes	367
Reconfigure feeder ties CNC073	411,159	Capacity	Capacity	Capacity	Yes	367
Extend IDA064 to relieve TWL064	32,440	Capacity	Capacity	Capacity	Yes	367
Install new RRK TR3 Feeder	3,046	Capacity	Capacity	Capacity	Yes	367
New South Afton Substation and feeders	367,662	Capacity	Capacity	Major capacity project	No	360
Install DBL082 OH feeder	47	Capacity	Capacity	Capacity	Yes	367
New First Lake sub	(6,363)	Capacity	Capacity	Capacity	Yes	361
New First Lake feeder FSL311	(28,707)	Capacity	Capacity	Capacity	Yes	366
Instl second bank Fiesta City	7,977	Capacity	Capacity	Capacity	Yes	362
Remove and Retire Empire Park substation	(77,961)	Capacity	Asset Health	Asset Health	No	366
Reinforce Lowry TR1, replace regulators	1,071,322	Capacity	Capacity	Capacity	Yes	362
Install 2nd tansformer at Sauk River	5,635	Capacity	Capacity	Capacity	Yes	362
Install #2 28 MVA 115/13.8kV at Baytown	3,613,144	Capacity	Capacity	Capacity	Yes	362
Inst BYT#2 28 MVA OH Fdrs	1,076,341	Capacity	Capacity	Capacity	Yes	367

Project Title	2018 YE FCST	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	FERC Acct
CUSTOMER ID REDACTED	(500,000)	Capacity	Capacity	Customer driven	No	361
CUSTOMER ID REDACTED	(500,000)	Capacity	Capacity	Customer driven	No	361
CUSTOMER ID REDACTED	(66,873)	Capacity	Capacity	Customer driven	No	361
TER065, extend TER073 to provide load re	18,402	Capacity	Capacity	Capacity	Yes	367
CUSTOMER ID REDACTED	(472)	Capacity	Capacity	Customer driven	No	364
MEL073,Cut load to MEL065	100,307	Capacity	Capacity	Capacity	Yes	367
Crosstown new 13.8kv Sub	1,575	Capacity	Capacity	Major capacity projec	No	362
CUSTOMER ID REDACTED	89,785	Capacity	Capacity	Customer driven	No	362
Install new sub Lake Bavaria	(10,257)	Capacity	Capacity	Capacity	Yes	362
Install new WCS fdr on WCS TR2	584,396	Capacity	Capacity	Capacity	Yes	367
Install 2nd feeder bay at Plat	3,049	Capacity	Capacity	Customer driven	No	362
Install stepdown tie GSL65-GSL342	182,871	Capacity	Capacity	Capacity	Yes	367
Install WCS TR2 and 2 fdr bays	1,128,572	Capacity	Capacity	Capacity	Yes	362
Reinforce GNL072 feeder exit	178,621	Capacity	Capacity	Capacity	Yes	367
Reinforce HYL feeder exits	809,629	Capacity	Capacity	Capacity	Yes	367
Reinforce GNL072 equipment in sub	468,921	Capacity	Capacity	Capacity	Yes	362
CUSTOMER ID REDACTED	(370,991)	Capacity	Capacity	Customer driven	No	367
Add Crystal Foods 62 Feeder	(1,467)	Capacity	Capacity	Capacity	Yes	362
Add Eastwood TR3	1,373,708	Capacity	Capacity	Capacity	Yes	362
Add new 23.9kV feeder at WAT	690,000	Capacity	Asset Health	Asset Health	No	364
Reconductor Credit River 31	0	Capacity	Capacity	Capacity	Yes	#N/A
Add 2nd 23.9kV Transformer and	610,234	Capacity	Asset Health	Asset Health	No	362
Add Dundas 072 Feeder Bay	300,631	Capacity	Capacity	Capacity	Yes	362
Add Dundas 072 Feeder-dist	624,990	Capacity	Capacity	Capacity	Yes	364
Reconfigure feeder ties CNC073	(7,553)	Capacity	Capacity	Capacity	Yes	366
Install a 50MVA 115/13.8 kV tr	99,049	Capacity	Capacity	Transmission driven	No	362
Reconfigure TWL067 feeder taps	32,000	Capacity	Capacity	Capacity	Yes	367
Install Lone Oak 93-81 Tie	430,000	Capacity	Capacity	Capacity	Yes	367
Extend ALK064 Feeder	350,000	Capacity	Capacity	Capacity	Yes	367
Add feeder WBP062	350,000	Capacity	Capacity	Capacity	Yes	367
Build New CHE065 Feeder Bay	995	Capacity	Capacity	Capacity	Yes	362
Land for S. Afton sub	6,528	Capacity	Capacity	Major capacity projec	No	360
Install new South Washington ERU Sub	20,149	Capacity	Capacity	Major capacity projec	No	362
Transfer WES062 load to WES063	200,000	Capacity	Capacity	Capacity	Yes	367
Install 35KV xfmr Salida Crossing	1,713,789	Capacity	Capacity	Customer driven	No	362
Install New Feedr at Sauk River #2	579,948	Capacity	Capacity	Capacity	Yes	367
Instl second bank Fiesta City	(5,841)	Capacity	Capacity	Capacity	Yes	361
Retire EMPsub- Reroute 34.5kV	75,000	Capacity	Asset Health	Asset Health	No	367
Salida Crossing feeder SDX311	500,000	Capacity	Capacity	Customer driven	No	367
New First Lake sub	58,115	Capacity	Capacity	Capacity	Yes	362
Atwater Replace ATW062 Breaker	614	Capacity	Capacity	Customer driven	No	362
Install 2nd tansformer at Sauk River	1,901,974	Capacity	Capacity	Capacity	Yes	362
Reinforce Lowry TR1, replace regulators	480,537	Capacity	Capacity	Capacity	Yes	362
Inst BYT#2 28 MVA OH fdrs	(10,524)	Capacity	Capacity	Capacity	Yes	366
Move HUG321-WYO032 sd xfmr and conve	150,000	Capacity	Capacity	Capacity	Yes	367
Inst BYT#2 28 MVA	10,727	Capacity	Capacity	Capacity	Yes	362

Project Title	2019	2020	Original Xcel Classification	New Xcel Classification	VOS Classification	Capacity related VOS Yes or No	FERC Acct
Hiawatha West HWW TR02 install	$0	$100,000	Capacity	Capacity	Capacity	Yes	#N/A
Crosstown new 13.8kv sub 2 fdrs	$500,000	$1,200,000	Capacity	Capacity	Major capacity project	No	367
Crosstown new 13.8kv sub 2 fdrs	$100,000	$3,350,000	Capacity	Capacity	Major capacity project	No	362
ELP84 - cut to HWW61	$0	$250,000	Capacity	Capacity	Capacity	Yes	#N/A
TER065, extend TER073 to provide load relief	$0	$150,000	Capacity	Capacity	Capacity	Yes	#N/A
TER066, Extend MST074	$0	$350,000	Capacity	Capacity	Capacity	Yes	#N/A
Reinforce WSG feeder capacities	$0	$250,000	Capacity	Capacity	Capacity	Yes	#N/A
Reinforce WSG feeder capacities	$0	$300,000	Capacity	Capacity	Capacity	Yes	#N/A
Upgrade SAV063 and SAV067 feeder capacities	$0	$100,000	Capacity	Capacity	Capacity	Yes	#N/A
SSI: Install 12.47kV Zumbrota #2	$0	$100,000	Capacity	Capacity	Capacity	Yes	#N/A
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 feeder	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes	362
Reinforce FAPTR1 69/13.8kV to 28MVA and add 1 feeder	$0	$400,000	Capacity	Capacity	Capacity	Yes	#N/A
Reinforce Kasson TR1 and Fdrs	$0	$100,000	Capacity	Capacity	Capacity	Yes	#N/A
Upgrade Medford Junction TR1 to 14MVA	$100,000	$2,200,000	Capacity	Capacity	Capacity	Yes	362
Upgrade VESTR1 and add VES022	$0	$100,000	Capacity	Capacity	Capacity	Yes	#N/A
Convert Hollydale Sub to 115kV	$1,500,000	$5,000,000	Capacity	Capacity	Transmission driven	No	362
Convert Hollydale Sub to 115kV	$1,500,000	$3,000,000	Capacity	Capacity	Transmission driven	No	367
Add 70MVA 115/34.5kV Rosemount TR2	$100,000	$1,100,000	Capacity	Capacity	Capacity	Yes	362
Add STY TR3 and two new feeders	$0	$1,600,000	Capacity	Capacity	Capacity	Yes	#N/A
Add STY TR3 and two new feeders	$100,000	$1,200,000	Capacity	Capacity	Capacity	Yes	362
New South Afton Substation and feeders	$500,000	$4,000,000	Capacity	Capacity	Major capacity project	No	362
New South Afton Substation and feeders	$0	$400,000	Capacity	Capacity	Major capacity project	No	#N/A
TAM - Upgrade RRK TR2	$50,000	$670,000	Capacity	Capacity	Transmission driven	No	362
New MPK075-GPH061 Feeder Tie	$0	$250,000	Capacity	Capacity	Capacity	Yes	#N/A
Install 35KV transformer at Salida Crossing	$1,500,000	$0	Capacity	Capacity	Customer driven	No	361
Install 35KV transformer at Salida Crossing	$1,100,000	$0	Capacity	Capacity	Customer driven	No	367
Install 2nd tansformer at Sauk River	$600,000	$0	Capacity	Capacity	Capacity	Yes	367
Install 2nd tansformer at Sauk River	$945,000	$0	Capacity	Capacity	Capacity	Yes	362
Reinforce SCL TR2 to 70MVA	$2,000,000	$0	Capacity	Capacity	Capacity	Yes	362
Install new FIC fdr to serve MTV area	$0	$475,000	Capacity	Capacity	Capacity	Yes	#N/A
Install new FIC fdr to serve MTV area	$0	$500,000	Capacity	Capacity	Capacity	Yes	#N/A
Reinforce Glenwood sub equipment	$0	$40,000	Capacity	Capacity	Capacity	Yes	#N/A
Install new KOL feeder to serve OAD	$0	$800,000	Capacity	Capacity	Capacity	Yes	#N/A
Add 2 New Baytown Feeders	$0	$1,200,000	Capacity	Capacity	Capacity	Yes	#N/A