Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _TARIF_

1. Which of the following do you do in your position?

   a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)?   ☑ Yes   ☐ No

   b. Participate in decisions about servicing or maintaining equipment for your data center?

   ☑ Yes   ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

   Enter number here _NTT Communications: >30   NTT America: 10_

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

   Enter number here _All US sites_

4. The majority of the data centers you help manage are:
   a. Server closets or rooms (less than 500 square feet)
   b. Localized data centers (500 – 5,000 square feet)
   c. Enterprise data centers (> 5,000 square feet)
   d. ⃝ Mega or utility-scale data centers (>10,000 square feet)

5. What is the average number of racks in your typical data center?

   Enter number here _____ or ☑ if > 2000

6. How many servers are there in your organization as a whole?
   ☐ < 2000
   ☐ 2000 – 10,000
   ☐ 10,000 – 50,000
   ☑ > 50,000

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7. What type of data centers does your company operate?
   - ☐ Server rooms or closets
   - ☑ Enterprise/corporate data centers
   - ☑ Cloud/hyperscale computing
   - ☐ High-performance/scientific computing
   - ☑ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
   - (a.) IT services
   - b. Energy and utilities
   - c. Media and telecommunications
   - (d.) Banking and financial services
   - e. Health care
   - f. Education
   - (g.) Co-location/shared
   - h. Other: _____

9. What state(s) are your data centers located in?

   Enter states here: _CA, VA, CT, TX, WI, NY_____

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    (a.) Within the last 3 years
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    ___~ 3 - 5 YRS._____

12. How often do you make major infrastructure upgrades to your data centers? _ANNUALLY_

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☑ Yes   ☐ No

14. Have you had an energy audit performed by a third party within the last three years?

☐ Yes   ☑ No

15. Do you track energy use on a regular basis? ___YES___

    a. What is the typical annual electricity consumption (kwh) of one of your data centers?
        _____

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures?

    a. If so, what is the average PUE of your data centers? ___1.3 (newer DCs) – 1.6 (legacy)___

17. Do you track server utilization?

  a. Is so, what is the average server utilization rate of your data centers? _____

18. Do you rent data center space ***from another company***?   ☑ Yes   ☐ No

    If yes, what percentage of your data center needs are met by renting space from others?
    ___< 10%___ %

19. Do you lease or outsource ***from another company*** any of the following elements of your data centers?

	Yes	No	Sometimes
b. Servers	☐	☐	☑
c. Facility management	☐	☐	☑
d. Maintenance & repairs	☐	☐	☑
e. Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) ***to other companies***?   ☐ Yes   ☑ No

    If yes, what percentage of your racks are leased to other companies? _____ %

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? ___No_____

22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☑	☐	☐	☐	☐
Blanking panels	☑	☐	☐	☐	☐
Enclose server racks (e.g., strip curtains)	☑	☐	☐	☐	☐
Data center infrastructure management (DCIM) software	☑	☐	☐	☐	☐
Raising temperature set points	☑	☐	☐	☐	☐
List typical facility temperature: _76 F Cold Aisle_					
Variable speed fan drives	☑	☐	☐	☐	☐
Energy-efficient air handling units	☑	☐	☐	☐	☐
Modular facility design for data center expansion	☑	☐	☐	☐	☐
Air-side economizer	☑	☐	☐	☐	☐
Water-side economizer	☑	☐	☐	☐	☐
Energy-efficiency lighting	☑	☐	☐	☐	☐
Predictive modeling of future IT deployments	☐	☐	☑	☐	☐
Other, specify: _Vigilent Dynamic Control of Cooling_	☑	☐	☐	☐	☐
Servers					
Energy-efficient server hardware (e.g., power supply, fans, etc.)	☑	☐	☐	☐	☐
Underclocking	☐	☐	☐	☐	☐
Virtualization	☑	☐	☐	☐	☐
Decommission idle servers	☑	☐	☐	☐	☐
Consolidate lightly used servers	☑	☐	☐	☐	☐
Improve data storage efficiency	☐	☐	☐	☐	☐
IT power management software	☑	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☐	☐	☐	☑	☐
Space and power block pricing (differentiate power and energy)	☑	☐	☐	☐	☐
Space and actual power pricing (differentiate power and energy)	☑	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐

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Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _Tom_

1. Which of the following do you do in your position?

   a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)?   ☒ Yes   ☐ No

   b. Participate in decisions about servicing or maintaining equipment for your data center?

      ☒ Yes   ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

Enter number here _≈ 80_

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

Enter number here _All_

4. The majority of the data centers you help manage are:
   (a.) Server closets or rooms (less than 500 square feet)
   b. Localized data centers (500 – 5,000 square feet)
   c. Enterprise data centers (> 5,000 square feet)
   d. Mega or utility-scale data centers (>10,000 square feet)

5. What is the average number of racks in your typical data center?   _75 - 2_
                                                                          _5 - 20_

Enter number here _15-2 , 5-20_ or ☐ if > 2000

6. How many servers are there in your organization as a whole?
   ☒ < 2000
   ☐ 2000 – 10,000
   ☐ 10,000 – 50,000
   ☐ > 50,000

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7. What type of data centers does your company operate?
   - ☒ Server rooms or closets
   - ☒ Enterprise/corporate data centers
   - ☐ Cloud/hyperscale computing
   - ☐ High-performance/scientific computing
   - ☐ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
   a. IT services
   b. Energy and utilities
   c. Media and telecommunications
   d. Banking and financial services
   e. Health care
   f. Education
   g. Co-location/shared
   h. Other: _Food & Beverage_

9. What state(s) are your data centers located in?

   Enter states here: _Primary - Texas, Colorado / ≈75 Across US / Various States_

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    (a.) Within the last 3 years
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    3-5 years

12. How often do you make major infrastructure upgrades to your data centers? _Annual_

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☒ Yes   ☐ No

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14. Have you had an energy audit performed by a third party within the last three years?

☒ Yes   ☐ No

  ↳ *Production Facilities only, No Data Center*

15. Do you track energy use on a regular basis? ___*NO*___

    a. What is the typical annual electricity consumption (kwh) of one of your data centers?

    _____

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures? *NO*

    a. If so, what is the average PUE of your data centers? _____

17. Do you track server utilization? *Yes*

    a. Is so, what is the average server utilization rate of your data centers? ___*< 50%*___

18. Do you rent data center space *from another company*?   ☒ Yes   ☐ No

    If yes, what percentage of your data center needs are met by renting space from others?
    ___*60*___ %

19. Do you lease or outsource *from another company* any of the following elements of your data centers?

		Yes	No	Sometimes
b.	Servers	☐	☐	☒
c.	Facility management	☐	☐	☒
d.	Maintenance & repairs	☐	☐	☒
e.	Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) *to other companies*?   ☐ Yes   ☒ No

    If yes, what percentage of your racks are leased to other companies? _____ %

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? ___*Facility owner*___

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22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☒	☐	☐	☐	☐
Blanking panels	☐	☐	☐	☐	☒
Enclose server racks (e.g., strip curtains)	☐	☐	☒	☐	☐
Data center infrastructure management (DCIM) software	☐	☐	☒	☐	☐
Raising temperature set points	☐	☐	☐	☐	☒
List typical facility temperature: _____					
Variable speed fan drives	☒	☐	☐	☐	☐
Energy-efficient air handling units	☒	☐	☐	☐	☐
Modular facility design for data center expansion	☐	☐	☒	☐	☐
Air-side economizer	☐	☐	☐	☐	☒
Water-side economizer	☐	☐	☐	☐	☒
Energy-efficiency lighting	☒	☐	☐	☐	☐
Predictive modeling of future IT deployments	☐	☐	☒	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
Servers					
Energy-efficient server hardware (e.g., power supply, fans, etc.)	☒	☐	☐	☐	☐
Underclocking	☐	☐	☐	☐	☒
Virtualization	☒	☐	☐	☐	☐
Decommission idle servers	☒	☐	☐	☐	☐
Consolidate lightly used servers	☒	☐	☐	☐	☐
Improve data storage efficiency	☐	☐	☒	☐	☐
IT power management software	☐	☐	☒	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☐	☐	☐	☐	☒
Space and power block pricing (differentiate power and energy)	☐	☐	☐	☐	☒
Space and actual power pricing (differentiate power and energy)	☐	☐	☐	☐	☒
Other, specify: _____	☐	☐	☐	☐	☐

Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _____MARK_____

1. Which of the following do you do in your position?

    a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)? ☑ Yes ☐ No

    b. Participate in decisions about servicing or maintaining equipment for your data center?

    ☑ Yes ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

Enter number here _____50_____

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

Enter number here _____1_____

4. The majority of the data centers you help manage are:
    a. Server closets or rooms (less than 500 square feet)
    b. Localized data centers (500 – 5,000 square feet)
    c. Enterprise data centers (> 5,000 square feet)
    d. Mega or utility-scale data centers (>10,000 square feet)

5. What is the average number of racks in your typical data center?

Enter number here _____1000_____ or ☐ if > 2000

6. How many servers are there in your organization as a whole?
    ☐ < 2000
    ☐ 2000 – 10,000
    ☑ 10,000 – 50,000
    ☐ > 50,000

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7. What type of data centers does your company operate?
    - ☑ Server rooms or closets
    - ☑ Enterprise/corporate data centers
    - ☐ Cloud/hyperscale computing
    - ☐ High-performance/scientific computing
    - ☐ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
    a. IT services
    b. Energy and utilities
    c. Media and telecommunications
    d. Banking and financial services
    e. Health care
    f. Education
    g. Co-location/shared
    h. Other: _____INSURANCE_____

9. What state(s) are your data centers located in? TX, IL

    Enter states here: ___TX , IL_____

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    a. Within the last 3 years
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    _____4 YRS_____

12. How often do you make major infrastructure upgrades to your data centers?___10 YRS__

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☑ Yes   ☐ No

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14. Have you had an energy audit performed by a third party within the last three years?

☐ Yes   ☑ No

15. Do you track energy use on a regular basis? _____NO_____

    a. What is the typical annual electricity consumption (kwh) of one of your data centers? ____?____

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures? NO

    a. If so, what is the average PUE of your data centers? _____

17. Do you track server utilization? NO

    a. Is so, what is the average server utilization rate of your data centers? _____

18. Do you rent data center space *from another company*?   ☐ Yes   ☑ No

If yes, what percentage of your data center needs are met by renting space from others?
_____%

19. Do you lease or outsource *from another company* any of the following elements of your data centers?

	Yes	No	Sometimes
b. Servers	☐	☐	☑
c. Facility management	☐	☑	☐
d. Maintenance & repairs	☑	☐	☐
e. Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) *to other companies*?   ☑ Yes   ☐ No

If yes, what percentage of your racks are leased to other companies? _____5_____%

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? _____NO_____

22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☑	☐	☐	☐	☐
Blanking panels	☑	☐	☐	☐	☐
Enclose server racks (e.g., strip curtains)	☐	☐	☑	☐	☐
Data center infrastructure management (DCIM) software	☑	☐	☐	☐	☐
Raising temperature set points	☑	☐	☐	☐	☐
List typical facility temperature: _78_					
Variable speed fan drives	☑	☐	☐	☐	☐
Energy-efficient air handling units	☑	☐	☐	☐	☐
Modular facility design for data center expansion	☐	☐	☑	☐	☐
Air-side economizer	☑	☐	☐	☐	☐
Water-side economizer	☑	☐	☐	☐	☐
Energy-efficiency lighting	☑	☐	☐	☐	☐
Predictive modeling of future IT deployments	☐	☐	☐	☐	☑
Other, specify: _____	☐	☐	☐	☐	☐
Servers					
Energy-efficient server hardware (e.g., power supply, fans, etc.)	☑	☐	☐	☐	☐
Underclocking	☐	☐	☐	☐	☑
Virtualization	☐	☐	☐	☐	☑
Decommission idle servers	☐	☐	☐	☐	☑
Consolidate lightly used servers	☐	☐	☐	☐	☑
Improve data storage efficiency	☐	☐	☐	☐	☑
IT power management software	☐	☐	☐	☐	☑
Other, specify: _____	☐	☐	☐	☐	☐
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☑	☐	☐	☐	☐
Space and power block pricing (differentiate power and energy)	☑	☐	☐	☐	☐
Space and actual power pricing (differentiate power and energy)	☑	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐

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Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _DAVID_

1. Which of the following do you do in your position?

   a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)? ☒ Yes   ☐ No

   b. Participate in decisions about servicing or maintaining equipment for your data center?

      ☐ Yes   ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

   Enter number here _4_

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

   Enter number here _4_

4. The majority of the data centers you help manage are:
   a. Server closets or rooms (less than 500 square feet)
   b. Localized data centers (500 – 5,000 square feet)
   c. Enterprise data centers (> 5,000 square feet)
   d. Mega or utility-scale data centers (>10,000 square feet)

5. What is the average number of racks in your typical data center?

   Enter number here _500_ or ☐ if > 2000

6. How many servers are there in your organization as a whole?
   ☐ < 2000
   ☒ 2000 – 10,000
   ☐ 10,000 – 50,000
   ☐ > 50,000

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7. What type of data centers does your company operate?
   - ☐ Server rooms or closets
   - ☐ Enterprise/corporate data centers
   - ☐ Cloud/hyperscale computing
   - ☐ High-performance/scientific computing
   - ☒ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
   a. IT services
   b. Energy and utilities
   c. Media and telecommunications
   d. Banking and financial services
   e. Health care
   f. Education
   g. Co-location/shared
   h. Other: _____ WEB SERVICES _____

9. What state(s) are your data centers located in?

   Enter states here: _____ TX , ~~#~~ VA, CA _____

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    a. Within the last 3 years
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    _____ HAVEN'T REACHED THAT POINT _____

12. How often do you make major infrastructure upgrades to your data centers? _6-MONTH_

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☐ Yes   ☒ No

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14. Have you had an energy audit performed by a third party within the last three years?

☐ Yes   ☒ No

15. Do you track energy use on a regular basis? ___Yes___

    a. What is the typical annual electricity consumption (kwh) of one of your data centers?
    _____

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures?

    a. If so, what is the average PUE of your data centers? _____

17. Do you track server utilization?   Yes

a. Is so, what is the average server utilization rate of your data centers? _70-80%_

18. Do you rent data center space *from another company*?   ☒ Yes   ☐ No

If yes, what percentage of your data center needs are met by renting space from others?
___100___ %

19. Do you lease or outsource *from another company* any of the following elements of your data centers?

	Yes	No	Sometimes
b. Servers	☐	☒	☐
c. Facility management	☒	☐	☐
d. Maintenance & repairs	☐	☐	☒
e. Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) *to other companies*?   ☐ Yes   ☒ No

If yes, what percentage of your racks are leased to other companies? _____ %

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? ___No_____

22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☒	☐	☐	☐	☐
Blanking panels	☒	☐	☐	☐	☐
Enclose server racks (e.g., strip curtains)	☒	☐	☐	☐	☐
Data center infrastructure management (DCIM) software	☒	☐	☐	☐	☐
Raising temperature set points	☐	☐	☒	☐	☐
List typical facility temperature: _____					
Variable speed fan drives	☒	☐	☐	☐	☐
Energy-efficient air handling units	☒	☐	☐	☐	☐
Modular facility design for data center expansion	☐	☐	☒	☐	☐
Air-side economizer	☒	☐	☐	☐	☐
Water-side economizer	☒	☐	☐	☐	☐
Energy-efficiency lighting	☒	☐	☐	☐	☐
Predictive modeling of future IT deployments	☒	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
Servers					
Energy-efficient server hardware (e.g., power supply, fans, etc.)	☒	☐	☐	☐	☐
Underclocking	☐	☐	☐	☐	☒
Virtualization	☒	☐	☐	☐	☐
Decommission idle servers	☒	☐	☐	☐	☐
Consolidate lightly used servers	☐	☐	☒	☐	☐
Improve data storage efficiency	☒	☐	☐	☐	☐
IT power management software	☐	☐	☒	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☐	☐	☒	☐	☐
Space and power block pricing (differentiate power and energy)	☒	☐	☐	☐	☐
Space and actual power pricing (differentiate power and energy)	☐	☐	☐	☐	☐
Other, specify: _____	☐	☐	☒	☐	☐

Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _____Dave_____

1. Which of the following do you do in your position?

   a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)? ☒ Yes ☐ No

   b. Participate in decisions about servicing or maintaining equipment for your data center?

   ☒ Yes ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

   Enter number here _____6_____

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

   Enter number here _____6_____

4. The majority of the data centers you help manage are:
   a. Server closets or rooms (less than 500 square feet)
   b. Localized data centers (500 – 5,000 square feet)
   c. Enterprise data centers (> 5,000 square feet)
   d. Mega or utility-scale data centers (>10,000 square feet)

5. What is the average number of racks in your typical data center?

   Enter number here _____ or ☒ if > 2000

6. How many servers are there in your organization as a whole?
   ☐ < 2000
   ☐ 2000 – 10,000
   ☐ 10,000 – 50,000
   ☒ > 50,000

7. What type of data centers does your company operate?
    ☒ Server rooms or closets
    ☒ Enterprise/corporate data centers
    ☒ Cloud/hyperscale computing
    ☐ High-performance/scientific computing
    ☐ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
    ⓐ IT services
    b. Energy and utilities
    c. Media and telecommunications
    d. Banking and financial services
    e. Health care
    f. Education
    g. Co-location/shared
    h. Other: _____

9. What state(s) are your data centers located in?

    Enter states here: ___Texas, Georgia, Colorado,_____

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    ⓐ Within the last 3 years
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    ___5 years_____

12. How often do you make major infrastructure upgrades to your data centers? ___15-20 years___

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☒ Yes   ☐ No

14. Have you had an energy audit performed by a third party within the last three years?

☐ Yes   ☑ No   *(Do internal)*

15. Do you track energy use on a regular basis? ___Yes___

    a. What is the typical annual electricity consumption (kwh) of one of your data centers?
    _____ ~ 10 MW continuous load typical

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures? Yes

    a. If so, what is the average PUE of your data centers? _____ PUE___

17. Do you track server utilization?

   a. Is so, what is the average server utilization rate of your data centers? ___Yes confidential___

18. Do you rent data center space *from another company*?   ☐ Yes   ☑ No

If yes, what percentage of your data center needs are met by renting space from others?
_____Ø____%

19. Do you lease or outsource *from another company* any of the following elements of your data centers?

		Yes	No	Sometimes
b.	Servers	☐	☑	☐
c.	Facility management	☑	☐	☐
d.	Maintenance & repairs	☐	☐	☐
e.	Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) *to other companies*?   ☐ Yes   ☑ No

If yes, what percentage of your racks are leased to other companies? _____Ø_____%

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? _____N/A_____

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22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☒	☐	☐	☐	☐
Blanking panels	☒	☐	☐	☐	☐
Enclose server racks (e.g., strip curtains)	☒	☐	☐	☐	☐
Data center infrastructure management (DCIM) software	☒	☐	☐	☐	☐
Raising temperature set points	☒	☐	☐	☐	☐
List typical facility temperature: __80F__ *inlule of IT Bayer*					
Variable speed fan drives	☒	☐	☐	☐	☐
Energy-efficient air handling units	☒	☐	☐	☐	☐
Modular facility design for data center expansion	☒	☐	☐	☐	☐
Air-side economizer	☒	☐	☐	☐	☐
Water-side economizer	☐	☒	☐	☐	☐
Energy-efficiency lighting	☒	☐	☐	☐	☐
Predictive modeling of future IT deployments	☒	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
Servers					
#2 → Energy-efficient server hardware (e.g., power supply, fans, etc.)	☒	☐	☐	☐	☐
Underclocking	☐	☐	☐	☒	☐
#1 → Virtualization	☒	☐	☐	☐	☐
Decommission idle servers	☒	☐	☐	☐	☐
Consolidate lightly used servers	☒	☐	☐	☐	☐
Improve data storage efficiency	☒	☐	☐	☐	☐
IT power management software	☐	☐	☐	☒	☐
Other, specify: _____	☐	☐	☐	☐	☐
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☐	☐	☐	☐	☐ N/A
Space and power block pricing (differentiate power and energy)	☐	☐	☐	☐	☐ N/A
Space and actual power pricing (differentiate power and energy)	☐	☐	☐	☐	☐ N/A
Other, specify: _____	☐	☐	☐	☐	☐ N/A

Topic: Energy-related investment decisions for Data Centers.

Focus Group Questionnaire

First name: _____Jose_____

1. Which of the following do you do in your position?

    a. Participate in decisions about purchasing equipment for your data center (e.g., servers, software, racks, lighting, cooling equipment)? ☒ Yes ☐ No

    b. Participate in decisions about servicing or maintaining equipment for your data center?

        ☒ Yes ☐ No

2. How many How many data centers, server rooms, and server closets does your company own or operate?

Enter number here _____6_____

3. **[If more than one data center]** For how many data centers are you involved in major equipment purchase and maintenance decisions?

Enter number here _____6_____

4. The majority of the data centers you help manage are:
    a. Server closets or rooms (less than 500 square feet)
    b. Localized data centers (500 – 5,000 square feet)
    c. Enterprise data centers (> 5,000 square feet)
    d. Mega or utility-scale data centers (>10,000 square feet) ⟵ (circled)

5. What is the average number of racks in your typical data center?

Enter number here _____300-500_____ or ☐ if > 2000

6. How many servers are there in your organization as a whole?
    ☐ < 2000
    ☐ 2000 – 10,000
    ☐ 10,000 – 50,000
    ☐ > 50,000

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7. What type of data centers does your company operate?
    - ☐ Server rooms or closets
    - ☑ Enterprise/corporate data centers
    - ☑ Cloud/hyperscale computing
    - ☑ High-performance/scientific computing
    - ☑ Multi-tenant/colocation data centers

8. Which sectors does your data center support? (Name top three)
    a. IT services
    b. Energy and utilities ⟵ (circled)
    c. Media and telecommunications ⟵ (struck through)
    d. Banking and financial services ⟵ (circled)
    e. Health care
    f. Education
    g. Co-location/shared ⟵ (circled)
    h. Other: _____

9. What state(s) are your data centers located in?

    Enter states here: _MN, TN, OH, NC, MA_____

10. When did you last pursue a major equipment purchase/upgrade for your data center?
    a. Within the last 3 years ⟵ (circled)
    b. 3-5 years ago
    c. More than 5 years ago

11. How often do you replace servers in your data centers?
    _____N/A_____

12. How often do you make major infrastructure upgrades to your data centers?____N/A____

13. Do you actively participate in the EnergySTAR Buildings, Green Grid, or another third-party energy-efficiency program?

    ☑ Yes   ☐ No

14. Have you had an energy audit performed by a third party within the last three years?

☐ Yes   ☒ No

15. Do you track energy use on a regular basis? ___Yes___

   a. What is the typical annual electricity consumption (kwh) of one of your data centers?
   __400 - 600 Kw__

16. Do you track power usage effectiveness (PUE) or any other energy efficiency measures?

   a. If so, what is the average PUE of your data centers? __~400-600 kw__ 1.3

17. Do you track server utilization?

   a. Is so, what is the average server utilization rate of your data centers? __NO__

18. Do you rent data center space *from another company*?   ☐ Yes   ☒ No

   If yes, what percentage of your data center needs are met by renting space from others?
   _____%

19. Do you lease or outsource *from another company* any of the following elements of your data centers?

		Yes	No	Sometimes
b.	Servers	☐	☒	☐
c.	Facility management	☒	☐	☐
d.	Maintenance & repairs	☒	☐	☐
e.	Other, specify:_____	☐	☐	☐

20. Do you lease space in your data center(s) *to other companies*?   ☒ Yes   ☐ No

   If yes, what percentage of your racks are leased to other companies? __100__ %

21. If you lease DC space to or from another company, does the tenant or facility owner typically pay for electricity costs? _____
   Tenant

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22. Has your company considered or used any of the following technologies and energy saving strategies: **(check all that apply)**

	Has used		Never used		Don't know
	would use again	would not use again	would consider in the future	would not consider	
Facility Management					
Isolating hot/cold aisles	☒	☐	☐	☐	☐
Blanking panels	☒	☐	☐	☐	☐
Enclose server racks (e.g., strip curtains)	☒	☐	☐	☐	☐
Data center infrastructure management (DCIM) software	☒	☐	☐	☐	☐
Raising temperature set points	☒	☐	☐	☐	☐
List typical facility temperature: __75__					
Variable speed fan drives	☒	☐	☐	☐	☐
Energy-efficient air handling units	☒	☐	☐	☐	☐
Modular facility design for data center expansion	☒	☐	☐	☐	☐
Air-side economizer	☒	☐	☐	☐	☐
Water-side economizer	☒	☐	☐	☐	☐
Energy-efficiency lighting	☒	☐	☐	☐	☐
Predictive modeling of future IT deployments	☒	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐
Servers					
Energy-efficient server hardware (e.g., power supply, fans, etc.)	☐	☐	☐	☐	☒
Underclocking	☐	☐	☐	☐	☒
Virtualization	☐	☐	☐	☐	☒
Decommission idle servers	☐	☐	☐	☐	☒
Consolidate lightly used servers	☐	☐	☐	☐	☒
Improve data storage efficiency	☐	☐	☐	☐	☒
IT power management software	☐	☐	☐	☐	☒
Other, specify: _____	☐	☐	☐	☐	☒
[Multi-tenant DCs] Adjust pricing models to incentivize energy efficiency					
Space-based pricing	☒	☐	☐	☐	☐
Space and power block pricing (differentiate power and energy)	☒	☐	☐	☐	☐
Space and actual power pricing (differentiate power and energy)	☒	☐	☐	☐	☐
Other, specify: _____	☐	☐	☐	☐	☐