### MISSOURI PUBLIC SERVICE COMMISSION

### STAFF RECOMMENDATION

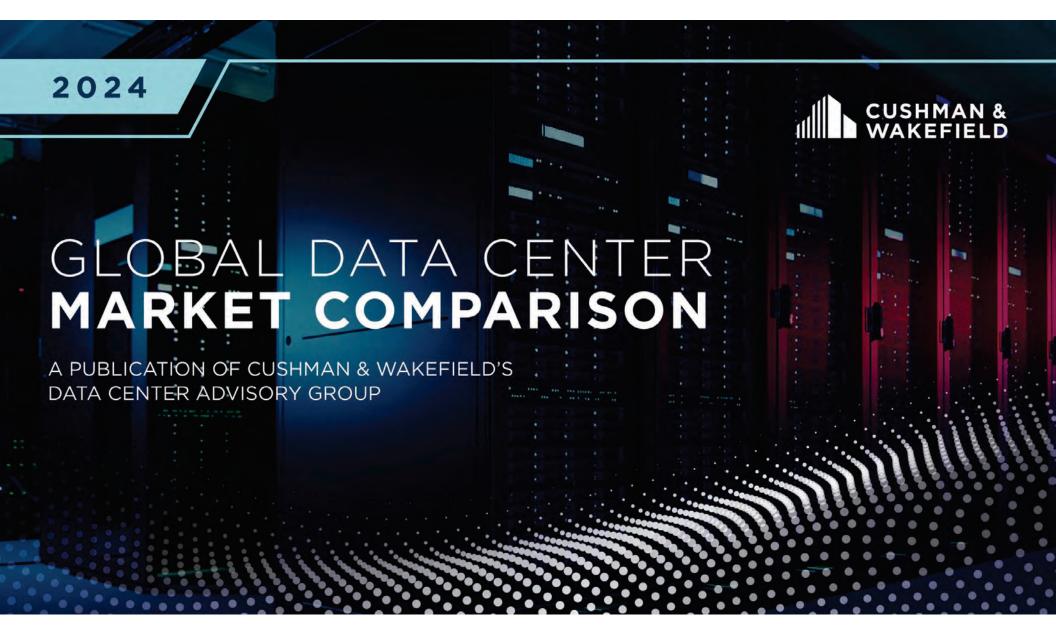
### **APPENDIX 2**

Staff Schedules 6 - 11

EVERGY METRO, INC., d/b/a Evergy Missouri Metro and EVERGY MISSOURI WEST, INC., d/b/a Evergy Missouri West

CASE NO. EO-2025-0154

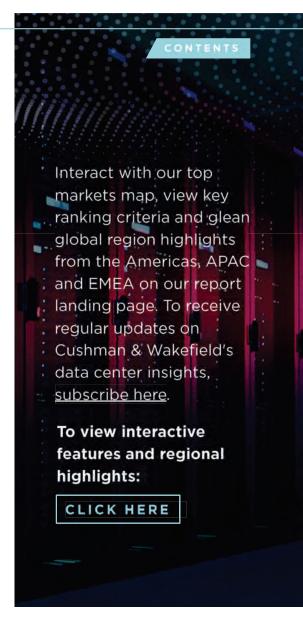
Jefferson City, Missouri July 25, 2025



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# POWER BECOMES PARAMOUNT

#### INTRODUCTION

Welcome to our 2024 Global Data Center Market Comparison Ranking, Last year was an incredible year for the industry across all regions, with substantive growth across both established and emerging markets. With commercial real estate and the overall economy facing mounting challenges, data centers remained in strong growth mode as the surge of interest in Al deployment, along with robust cloud demand, maintained confidence in the sector. The sector still encountered its share of challenges, however, with the availability of power and the availability of land (in certain markets) having become the preeminent consideration for hyperscalers and colocation providers searching for sites to swell their portfolios. As a result, data center operators have increasingly turned to secondary and tertiary markets around the world. Markets that only a few years ago were not present in any industry discussions have risen to the forefront and are seeing hundreds of megawatts (MW) in their pipelines.

The rise of generative AI has had a major impact on the sector, resulting in several data center players reevaluating how they strategize data center development. Al data centers can be divided into two categories: 1.) training facilities where Al models learn their applications on large datasets and 2.) inference facilities that deploy Al applications for users. Notably, training facilities will be less latency-dependent than traditional data centers. Site selection has changed as model training-focused facilities do not generally require as low latency as cloud deployments. while inference-focused facilities will remain proximal to cloud regions. The design of data centers will need to change as well; as rack densities will increase, so too will the intensity of cooling technologies. Many data center developers have opted for multiple avenues for cooling within their facilities, and many expect direct "to-the-chip" liquid cooling to rise to prominence. As cloud growth moderates on an annual basis going forward, Al will prove to be significant to the growth of data centers.

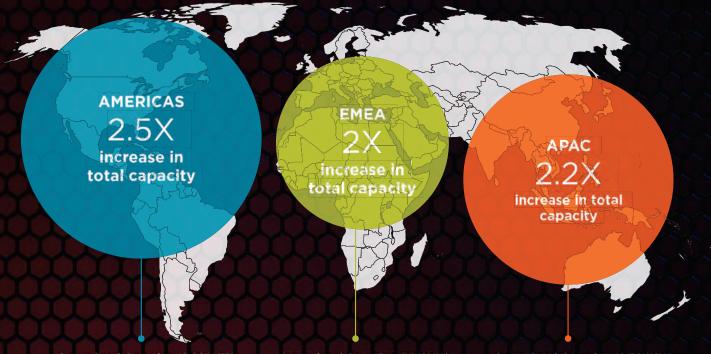
Cloud & Al driving demand for power, increasing server densities, cooling requirements Forecasted Annual Cloud & Al Revenues 2020 - 2028 \$250B -\$75.3 \$200B \$150B \$8.5 \$100B \$50B \$B 2020 2021 2022 2023 2024 2025 2026 2027 2028 ■Non-Al Global Colocation ■ Al Demand Average Server Rack Density Ranges (kw / rack) 140 -120 -80 40 -20 2022 2021 2023 2024 2025 Source: Cushman & Wakefield Research, Structure Research

# REGIONAL GROWTH

Total capacity is expected to continue its growth across regions, with each expected to double or more with current pipelines underway.

#### **KEY ASSUMPTIONS:**

- Development pipeline excludes developments currently at land stage
- Vacancy is only calculated on Operational Colocation IT Load
- The size of the bubble directly co-relates to the size of the regional markets
- 'Others' comprise of the telecom & edge operators



- Operational Capacity: 16,820MW
  - o Colocation: 8,909MW
  - o Cloud: 6,835MW
  - o Others: 1,076MW
- Vacancy: 5%
- Development Pipeline: 24,794MW
  - o Colocation: 20,963MW
  - o Cloud: 3,431MW
  - o Others: 400MW

- Operational Capacity: 6,218MW
- o Colocation: 4,659MW
- Cloud: 1,286MW
- o Others: 273MW
- Vacancy: 9%
- Development Pipeline: 6,528MW
  - o Colocation: 5,468MW
- o Cloud: 1,008MW
- o Others: 51MW

- Operational Capacity: 10,584MW
  - o Colocation: 8,819MW
  - o Cloud: 1514MW
  - o Others: 252MW
- Vacancy: 16%
- Development Pipeline: 13,281MW
  - o Colocation: 10,707MW
  - o Cloud: 2,486MW
  - o Others: 87MW

## INCLUDED MARKETS

\* New market in 2024 report

| AMERICAS               |                |  |
|------------------------|----------------|--|
| Atlanta                | NY-Northern NJ |  |
| Austin                 | Phoenix        |  |
| Bogota                 | Oregon         |  |
| Boston                 | Querétaro      |  |
| Chicago                | Quincy*        |  |
| Columbus               | Reno           |  |
| Dallas                 | Salt Lake City |  |
| Denver                 | SF Bay Area    |  |
| ndianapolis            | Santiago       |  |
| owa*                   | Sao Paulo      |  |
| Cansas City            | Seattle        |  |
| as Vegas               | Toronto        |  |
| Los Angeles            | Vancouver      |  |
| Minneapolis            | Virginia       |  |
| Montreal               |                |  |
| Nashville              |                |  |
| North / South Carolina |                |  |

| A             | PAC          |
|---------------|--------------|
| Auckland*     | Kuala Lumpur |
| Bangkok       | Manila       |
| Batam*        | Melbourne    |
| Beijing       | Mumbai       |
| Bengaluru     | Osaka        |
| Brisbane*     | Perth*       |
| Busan         | Pune*        |
| Canberra      | Seoul        |
| Chennai       | Shanghai     |
| Delhi NCR     | Singapore    |
| Guangzhou     | Sydney       |
| Hanoi         | Taipei*      |
| Ho Chi Minh   | Tokyo        |
| Hong Kong SAR |              |
| Hyderabad     |              |
| Jakarta       |              |
| Johor         |              |

| Ш            | MEA       |  |
|--------------|-----------|--|
| Abu Dhabi*   | London    |  |
| Amsterdam    | Madrid    |  |
| Athens*      | Marseille |  |
| Barcelona    | Milan     |  |
| Berlin       | Munich    |  |
| Brussels*    | Nairobi*  |  |
| Copenhagen   | Oslo      |  |
| Dammam*      | Paris     |  |
| Doha*        | Prague*   |  |
| Dubai*       | Reykjavik |  |
| Dublin       | Riyadh*   |  |
| Frankfurt    | Stockholm |  |
| Istanbul     | Vienna*   |  |
| Jeddah*      | Warsaw    |  |
| Johannesburg | Zaragoza* |  |
| Lagos*       | Zurich    |  |
| Lisbon*      |           |  |

### INCLUDED MARKETS

Many major markets have expanded beyond their traditional clusters and now encompass large swathes of area. Access to liquidity and transaction volumes have slowed for a host of CRE sectors as interest rates rise. While data centers have not been completely immune to this, there's been consistent momentum for further expansion of institutional capital in the space. Over the past year, we saw some major acquisition events: Brookfield Infrastructure and Ontario Teachers Pension Plan acquired Compass Datacenters for \$5.5B and Aligned Data Centers acquired LATAMbased ODATA for \$1.8B. While 2022 was a record year in terms of fundraising, with over \$41B raised by funds targeting the data center space, 2023 was far closer to historical averages with \$7B raised to target the sector. With many of the primary colocation providers now paired off with key institutional investors, there are few prospects for large scale acquisition opportunities remaining in established markets. Investors seeking entrance into the space may want to focus on partnering or acquiring emerging operators, ones who are less mature in their expansion plans or focused on specific regions.

As predicted in last year's report, the momentum for self-performing hyperscale assets continues. Hyperscalers are also some of the first

movers into emerging markets, taking advantage of their ability to execute vertically integrated self-builds as well as key partnerships with local governments and telecom companies. This year, hyperscalers made major announcements across Southeast Asia, the Middle East, South Asia, Sub-Saharan Africa and Latin America. While there have been a few cases of projects being paused or cancelled, fears of a complete halt of expansion plans in the wake of worldwide economic stress have been largely unfounded. Secondary markets are anticipated to continue their growth in importance as certain primary markets have run into constrictions, with power usage and sustainability scrutinized more carefully.

For established markets, growth momentum has continued in most markets despite the rise of power challenges and regulatory factors that began in 2022. In the Northern Virginia market, development marched quickly into areas not constrained by the infrastructure challenges of power distribution faced in the traditional clusters of Loudoun County. At this point, the market encompasses the entirety of Virginia with substantial developments announced for Prince

William County, Culpeper, Spotsylvania and as far as Richmond. This trend of moving to farther outlying areas to establish new data center clusters has become common across larger markets worldwide.

Data center developers around the world continue to face increasing pushback from government and local communities when it comes to development. Challenges have arisen from grid power availability versus competing uses, resistance, real or perceived, that data centers may not be bringing the level of economic betterment in the form of employment and taxes that local communities desire. Operators for their part have made increasingly stronger commitments to renewable power usage, providing investments that work to benefit their surrounding communities. In Singapore, the government has approved new data center builds to commence since lifting the development moratorium in 2022. In European markets like Frankfurt, Dublin and Amsterdam, discussions on the numerous projects proposed there continue.

## INTRODUCTION TO THE RANKING

The 2024 Global Data Center Market Comparison reviews a newly modified set of factors compared to previous editions of the report. With rapid changes in both tailwinds and headwinds of the space, the ranking model has been recalculated based on surveys we conducted on dozens of experts around the world, adjusting both the included variables and their rankings. Additionally, we have split the ranking between a list of established and emerging markets, as well as highlighted smaller markets that are of growing interest. For each factor, we will investigate the key trends globally with further commentary on a region-by-region basis.

With this fifth edition of the report, we hope to provide members of the data center community with a better understanding of how the industry is rapidly changing and expanding across the globe. Additionally, we aim to provide readers with an understanding of the differing dynamics of major and minor markets.

CUSHMAN & WAKEFIELD | DATA CENTER ADVISORY GROUP

### **METHODOLOGY** The 2024 Global Data Center Market Comparison reviews the same factors outlined in the previous two editions. We scored each data center across 14 weighted categories enabling us to assign each metropolitan area with an overall market score LOW-WEIGHT HIGH-WEIGHT MID-WEIGHT Power Availability · Environmental Risk Development **Pipeline** Land Availability Taxes Land Price Market Size Water Availability Fiber Connectivity Vacancy & Absorption Regulations & Incentives **Power Cost** Cloud Availability & Operator Presence Renewable Power Options

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### RANKING COMMENTARY

This year, we saw some substantial movement in exact rankings—with some familiar faces remaining in the Top Ten Established Markets while several newcomers entered our Top Ten Emerging Markets.

No longer defined as Northern Virginia, the Virginia mega-market now includes outlying submarkets such as Culpeper, Richmond, Spotsylvania County and Fredericksburg, Keeping Virginia securely in the top spot are its heightened available power infrastructure and land options. Across the Americas, Atlanta, Dallas, Phoenix and Oregon remained in the Top Ten Established Markets, while shuffling their exact positioning Chicago remained just outside, ranking 11 while Silicon Valley fell to 15 due to quickly rising power costs and limited land availability. For emerging markets, Kansas City, North / South

Carolina and Indianapolis have all been on the rise in terms of hyperscale development—all due to their significant available acreage and being connected to either largely untapped power grids or renewable energy development.

In the Asia Pacific region, Mumbai, Tokyo and Jakarta have jumped up the rankings as some of the most rapidly growing markets with each of them scoring well in absorption, development pipeline and vacancy among a host of other factors. Constriction with available land has pushed both Singapore and Hong Kong off the Global Top Ten Established Markets Ranking, For emerging markets, Osaka, Chennai, Hyderabad and Johor have benefited from high competition for sites in their nearby neighbors of Tokyo, Mumbai and Singapore.

In EMEA, while Frankfurt, London, Amsterdam, Paris and Dublin (FLAPD) markets continue to be challenged when it comes to future growth. markets such as Madrid have picked up the slack. London, as the largest European market, steadily remains on the list at 8, A host of emerging markets are growing in the region. with interest in Southern European markets like Milan and Mediterranean coastal markets, spurred by subsea connectivity to Africa, the Middle East and Asia Pacific. Meanwhile, the Nordic countries have seen interest as a result of large renewable energy reserves, leading to growth in Copenhagen, Stockholm and Oslo and more rural locations close to major renewable power connections.

### GLOBAL ESTABLISHED MARKETS RANKING 6. Phoenix 1. Virginia 2. Atlanta 7. Mumbai 3. Tokyo 8. Oregon 4. Dallas 9. Sydney 10. North/South 5. London Carolina GLOBAL EMERGING MARKETS RANKING 1. Kansas City 6. Zurich 2. Milan 7. Minneapolis 3. Nashville 8. Hyderabad 9. Austin 4. Osaka 5. lowa 10. Bangkok

# TOP 10 MARKETS BY REGION

ESTABLISHED MARKETS RANKINGS

#### EMERGING MARKETS RANKINGS

|    | AMERICAS             | APAC         | EMEA         |    | AMERICAS       | APAC      | EMEA       |
|----|----------------------|--------------|--------------|----|----------------|-----------|------------|
| 1  | Virginia             | Tokyo        | London       |    | Kansas City    | Osaka     | Milan      |
| 2  | Atlanta              | Mumbai       | Madrid       | 2  | Nashville      | Hyderabad | Zurich     |
| 3  | Dallas               | Sydney       | Paris        | 3  | lowa           | Bangkok   | Copenhagen |
| 4  | Phoenix              | Beijing      | Frankfurt    | 4  | Minneapolis    | Chennai   | Warsaw     |
| 5  | Oregon               | Jakarta      | Amsterdam    | 5  | Austin         | Delhi NCR | Riyadh     |
| 6  | North/South Carolina | Singapore    | Dublin       | 6  | Queretaro      | Taipei    | Zaragoza   |
| 7  | Chicago              | Johor        | Oslo         | 7, | Salt Lake City | Guangzhou | Abu Dhabi  |
| 8  | Columbus             | Kuala Lumpur | Brussels     | 8  | Indiana        | Batam     | Athens     |
| 9  | Toronto              | Shanghai     | Stockholm    | 9  | Santiago       | Manila    | Lagos      |
| 10 | SF Bay Area          | Hong Kong    | Johannesburg | 10 | Denver         | Pune      | Dammam     |

### POWER AVAILABILITY

Over the past year, power has become the number one consideration for data center operators as they conduct site selection to rapidly grow their portfolios. Many utility providers are suggesting wait times of 2-3 years or more for sizable power to be delivered to their developments. As data center campus sizes have grown on average, we've seen power requirements grow as well. In 2023, it was not uncommon to see power purchase agreements (PPAs) signed for 200, 300 or 400MW for new developments. Google set a record data center agreement when it signed a purchase of over 600 MW for its Texas self-build facilities.

Many operators have begun to canvas counties and utility providers across regions in search of large tracts of untapped, ready-to-go power in the range of hundreds to thousands of megawatts. Additionally, markets with available power from renewable sources such as wind, solar and hydroelectric have become prioritized.

The challenge of available power has led operators to invest in new power technologies. Battery storage facilities have become more commonplace; many renewable sources are now supplemented with battery storage to ensure more consistent power output. In Nevada, Google has tested a novel way of generating geothermal power through circulating and heating water through the earth's crust. Historically, geothermal power has been highly limited to markets with volcanic activity, such as Iceland. Now, states like California have added geothermal as a key source to the future energy mix of their markets.

For our estimates, we utilized estimates of current, availability along with capacity additions directly from utilities (from published resource plans where available) as well as additions from private energy developers that could form direct partnerships.

Multiple markets have received requests for power exceeding current grid capability

#### TOP MARKETS

Dallas

Mumbai

North / South Carolina

Frankfurt

Stockholm

Jakarta

Atlanta

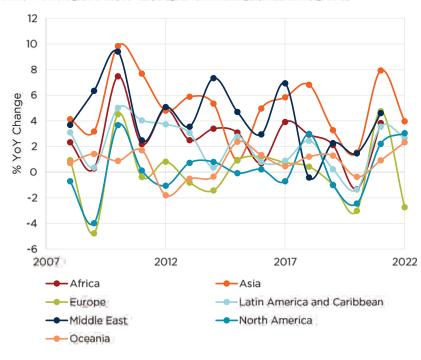
Virginia

Oslo

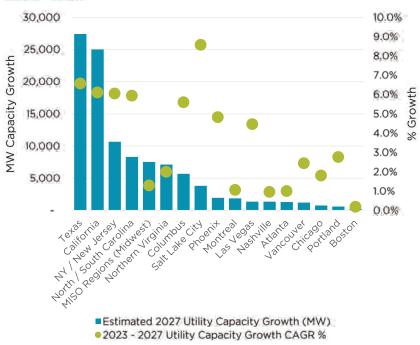
Madrid

## POWER AVAILABILITY

#### % YoY Change in Total Utility Demand by Global Region



### Case Study: US Utility Provider Markets Est. Capacity Growth 2023 - 2028



Source: Cushman & Wakefield Research, Ember Climate, Local Utility IRPs and Annual Reports (assuming baseline scenarios)

### LAND AVAILABILITY

As cloud demand has risen and with Al demand on the doorstep, operators have sought to build out ever larger developments to satisfy hyperscale users. In addition to demanding larger swathes of power, operators have sought to source larger acreages across all regions. The benefits of these larger acquisitions are two-fold. First, it enables developers to lock-in a land price that shields exposure to speculative demand that often emerges once a major data center development is announced in a market, and would place upward pressure on pricing. Second, it enables the operator to control the phasing of the development, as many of these newer campuses can have anywhere from 2 to 20 structures that

could be built over a period of several years.
Larger acreages also have some other minor benefits, including having additional land for substation or renewable energy development.
We've seen over the past few years land become constrained in a number of the major markets, including Singapore, New York / New Jersey, Frankfurt, Hong Kong and Silicon Valley. The push for available land has led to several secondary markets rising into prominence over the past year.

Availability was based on transaction totals in 2023 as an indicator of market activity and momentum.

While smaller transactions are still frequent, larger 500 – 1,000+ acre transactions are becoming more common.

#### TOP MARKETS

Phoenix

Dallas

Atlanta

Sydney

Jakarta

Virginia

Beijing

North / South Carolina

Kansas City

London

## LAND AVAILABILITY

#### Case Study: North America Data Center Land Sales - Average Site Size & Pricing Trend



Source: Cushman & Wakefield Research



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### MARKET SIZE

An existing major market has a multitude of advantages that appeal to clients and operators alike. After all, the most well-established markets have access to all major cloud services, allowing for high performance and peering opportunities.

There are known operators in these markets, with corresponding experienced talent for hire and knowledgeable sales representatives to assist with filling buildings. Local governments understand the planning approval process, and utilities are not surprised when operators inquire about large power requirements. While the largest markets may find constraints due to power availability or political obstacles, often there are rural outlying submarkets that can be more amenable to development.

For hyperscale cloud services, large markets appeal first as an opportunity to create new business and then to expand thereafter once usage has become commonplace. A number of colocation

operators will lease or build a major data center after signing an initial anchor tenant, in the expectation that surrounding enterprises or government organizations that conduct business with the initial tenant will later join on the platform. After a first hyperscaler enters, others follow to compete for market share, swelling the size of the capacity in-market and leading to further construction, with mid-scale cloud services moving in thereafter.

Americas: While Virginia remains far and away the largest market in the world, we've seen sizable growth in the next tier of markets. Dallas, Chicago, Phoenix and Atlanta have all added a large amount of capacity over the past year. Fast-growing markets such as Oregon, Columbus, Salt Lake City and Kansas City have all jumped substantially with hyperscalers expanding campuses.

APAC: The traditional major markets of Tokyo, Sydney, Hong Kong, Singapore and Beijing continue to outstrip inventories elsewhere. While Singapore and Hong Kong have faced regulatory and land availability challenges respectively, they remain highly desirable due to location and infrastructure. Growing digitization and infrastructure deployments in secondary APAC markets has led to growth in places such as Mumbai, Johor, Batam, Kuala Lumpur, Bangkok, Ho Chi Minh and Manila.

EMEA: While growth in FLAPD markets has slowed, Frankfurt, London, Paris and Dublin remain the largest markets in the region. Growth in Nordic and Mediterranean markets has led to quickly rising capacity in markets such as Madrid, Milan, Oslo and Stockholm. These two subregions will continue to see high speed growth going forward. In Africa and the Middle East, emergent data center clusters continue to gain momentum.

#### TOP MARKETS

Virginia

Beijing

Tokyo

Shanghai

London

Sydney

Frankfurt

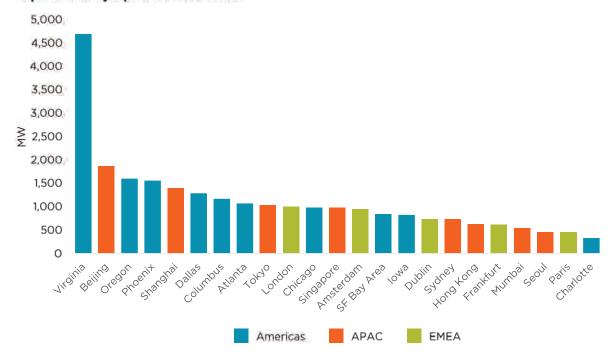
Oregon

Dublin

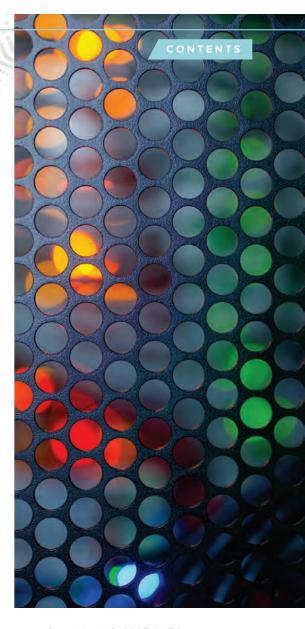
Phoenix

## MARKET SIZE

#### Top Markets by Operational IT Load



Source: Cushman & Wakefield Research, datacenterHawk, DC Byte, Structure Research



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# **DEVELOPMENT**PIPELINE

The continued growth in data center needs globally has led to an ever-growing development pipeline, as formerly secondary and tertiary markets rapidly scale. Last year, there was a record 7.1 GW under development across 63 markets. Since then, that number has grown to over 12GW with substantial growth in both traditional clusters in North America, Asia Pacific and Europe as well as rapid growth in Latin America, Africa and the Middle East.

Several countries around the world have already observed this development, with the strength of Frankfurt leading to development in Berlin and Munich in Germany, or an initial hub of Mumbai in India, leading to growth in Delhi, Chennai, Hyderabad and Bengaluru as examples.

Supply chain concerns, which had been present during the pandemic period, grew throughout the year. Certain projects experienced pauses in development as specific component sourcing faced challenges. In other instances, developers began stockpiling certain components in expectation of further challenges. Disruption will likely continue to be a nuisance over the next several years, as further supply chains are constructed, and vendors adjust manufacturing accordingly.

Americas: Buoyed by new announcements in outlying clusters, the six largest markets (Virginia, Dallas, Chicago, Phoenix, SF Bay Area and Atlanta) have all seen their pipelines reach record levels. Phoenix, Dallas, and Atlanta in particular have seen dramatic growth. In Phoenix's case, the market alone has well over 1GW in recently announced developments.

APAC: Hyperscale activity has continued to add significantly to pipelines across markets like Mumbai, with new announcements in Thailand and Vietnam leading to particular growth in those emergent markets. India recently crossed IGW in total capacity, with markets like Singapore, Sydney and Hong Kong also approaching the IGW mark.

EMEA: In spite of constraints on available power, land and political sentiment, the total pipeline of markets like Frankfurt, Dublin and London has continued to grow. Meanwhile pipelines in Mediterranean markets such as Milan, Madrid, Barcelona and Nordic markets like Stockholm, Oslo and Copenhagen have expanded.

#### TOP MARKETS

Virginia

Atlanta

Mumbai

Tokyo

Phoenix

Sydney

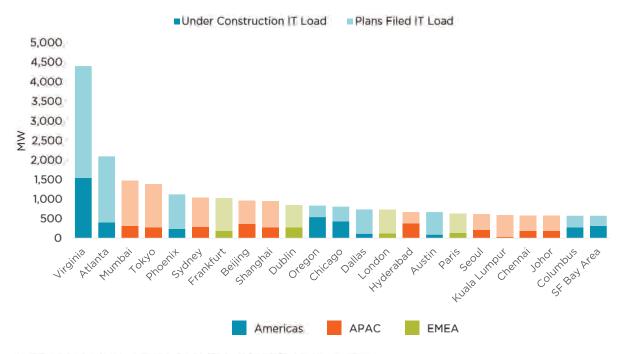
Frankfurt

Beijing

Shanghai

# **DEVELOPMENT**PIPELINE

Top Markets by Combined IT Load Under Construction / Plans Filed



Source: Cushman & Wakefield Research, datacenterHawk, DC Byte, Structure Research



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### LAND PRICE

While the cost of land ends up as roughly 10% of the total capital expenditures of a data center development, it remains a key one where developers can have control. Despite being a smaller fraction of overall costs, higher initial land pricing can provide certain barriers of entry and are a concern in several key data center markets that have grown accustomed to the largest deployments. A quality data center site has several factors noted throughout this report; access to power (and a supportive utility to work with). limited exposure to natural disasters, access to networks, provision of water for cooling systems, proper zoning and potentially incentive packages for locating in a particular area. The best markets have all of these and still maintain a low cost of land, a very tricky balance with sites in such demand.

Competition for sites between both data center players and other asset classes has reached a fever pitch over the past few years, Land pricing has steadily risen for sites with plentiful power, fiber connectivity, proper zoning, water and sewage management. Developers have increasingly sought larger and larger acreages for sites, seeking to control the destiny of their campuses while not being beholden to landbanking and prospecting by third parties aware of data center activity in a submarket, Many acquisitions now range in the hundreds of acres, with developers planning to phase buildout of campuses over several years. Competition for these power plentiful sites are not only in play between different data center developers, but increasing interest to EV battery factories and advanced chip manufacturing as well; asset classes that have been spurred by recent government incentives and needs for significant power.

Americas: Land competition has been high in established data center clusters, with new emergent submarkets seeing quick action for follow-on acquisitions from other operators in markets such as Columbus, Denver, Quincy, Salt Lake City, Kansas City, Tennessee and North / South Carolina.

APAC: Pricing remains high in the landconstrained major markets of Singapore and Hong Kong, Indeed, land pricing across many Asia-Pacific markets remains relatively elevated. Even minor markets have seen growth with data center entrants increasingly making acquisitions in markets such as Bantam, Perth, Ho Chi Minh and Jakarta,

EMEA: While European markets continue to have relatively high costs. African and Middle Eastern markets continue to have lower cost opportunities for data center developers. Markets such as Johannesburg, Cairo, Casablanca, Riyadh, Cape Town, Lagos and Nairobi.

#### TOP MARKETS

Hanoi

Batam

Perth

Columbus

Jakarta

Denver

Quincy

Queretaro

Nashville

Oregon

### FIBER CONNECTIVITY

Fiber density and quality are primary drivers for locating a data center, with fiber serving to connect the facility to others and to the end user. More networks are always better, with the diversity of fiber leading to lower latency and higher performance, even if certain networks connected to a particular data center may have bandwidth issues.

Bandwidth is an increasing discussion point to the edge, considering the move over the past two years to a work-from-home environment and the correspondingly constant usage of videoconferencing platforms for meetings that were once in person. Fiber networks are constructed in an array of formats, with short-haul fiber linking a metropolitan area or long-haul fiber connecting

multiple regions and countries. Undersea cables add to the mix, directly connecting landing points in countries across seas or oceans to transmit information. Like last year, we utilize the Ookla Speedtest Global Index for broadband speeds as an indicator for fiber connectivity and speed.

Results of the Speedtest Global Index analysis show that Beijing and Shanghai have pushed into the top spots, with smaller, highly connected American markets such as Austin, Kansas City, North / South Carolina and Columbus making an appearance.

Major Asia Pacific hubs such as Singapore and Hong Kong make an appearance along with regional key data points such as Abu Dhabi and Dallas.

Fiber networks are constructed in an array of formats, with short-haul fiber linking a metropolitan area or long-haul fiber connecting multiple regions and countries.

#### TOP MARKETS

Beijing

Shanghai

Austin

Kansas City

Abu Dhabi

North / South Carolina

Singapore

Hong Kong

Columbus

Dallas

## VACANCY / ABSORPTION

A tight market is a general indicator of heavy demand, and the same has applied in the data center world over the past year. Appetite for new capacity from hyperscale cloud services remains unsated, with the largest moving entire markets with one or two large leases. The issue around obtaining capacity is increasingly the same in most primary locations; where the total market may have anywhere from 5-10% vacancy, finding space in large hall- or building-sized spaces is exceptionally difficult for those who require contiguous 10 MW blocks. Often a dichotomy forms between those aiming for hyperscale and those working with the retail colocation market; one side will only aim for leases of 5 MW and above, while the other works with 500-kilowatt (kw) deployments and below.

To remedy this struggle, data center sites continue to trade not only what can be built today, but also what can be constructed in phases over a five- to 10-year period. Extra land allows for build-to-suit completions and expansions by current tenants and ensures staying power for years to come. Markets that have higher structural vacancy often witness

this vanish once an initial hyperscaler moves to the area; in the continued battle for market share, one key service often leads to many, and capacity rapidly disappears as these services compete for local enterprise, government and other organizational clients. Over the past year, pre-leasing of space has reached record levels, accounting for between 60% - 70% of leases in major markets.

Absorption figures have also reached record levels, totaling several gigawatts in each region: 4.2GW in the Americas, 1.7GW in EMEA and 2.3GW in APAC. This has been a result of a combination of both hyperscaler demand for additional cloud capacity as well as the burgeoning interest in artificial intelligence. Indeed, in North America alone, 2023 saw over 2GW of deals signed for artificial intelligence purposes.

Now most established markets see vacancies under 10%, with the top markets in each region being below 5% vacancy.

#### TOP MARKETS

Beijing

Shanghai

Austin

Kansas City

Abu Dhabi

North / South Carolina

Singapore

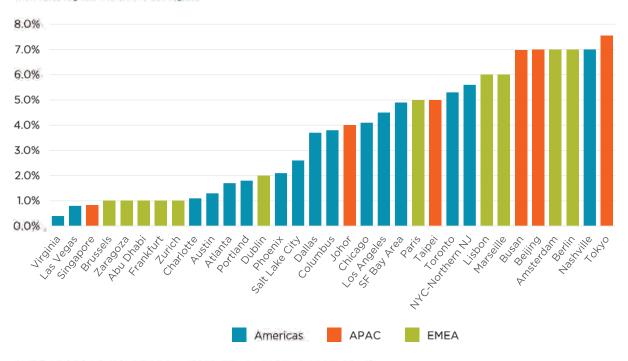
Hong Kong

Columbus

Dallas

## VACANCY / ABSORPTION

#### Markets by Lowest Vacancy %



Source: Cushman & Wakefield Research, catacenterHawk, DC Byte, Structure Research



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# CLOUD OPERATOR PRESENCE

One of the primary drivers of demand is the robust growth of cloud platforms; in nearly any market around the world hyperscale cloud services represent 70-80% of all leasing in any given quarter as the all-out battle for market share continues.

The three largest by market size (Amazon Web Services, Microsoft Azure, Google Cloud) continue to innovate apace, adding an array of services at the edge to join with core hosting, storage and database options, entrenching usage inside the largest enterprises and government organizations. As further entities choose to move more of their workloads to the public cloud for scalability and ease of access, a variety of markets will benefit as the hyperscalers work to bring clients online.

Of continued increase in importance are markets that offer multiple cloud services, as early adopters are now diversifying their workloads to create true hybrid IT. This will often include multiple public cloud instances for varying uses, along with some use of private cloud in a colocation environment for others. Markets that offer services such as peering opportunities and plenty of on-ramps will gain

business from these more sophisticated organizations, especially those that look to access a wide array of options and seek to utilize further specialized applications in the future. One adjustment we've made to our methodology is to include the presence of cloud service providers' edge locations in a market. These edge locations provide direct access to a secure backbone connected to larger availability zones and cache sites that the cloud provider maintains in the region, reducing latency and opening access to high performance for more users.

Of the 92 markets profiled in this report, 37 now offer all three major cloud services, all of which have considerable future expansion planned and land acquired in expectation of further growth. New entrant Hyderabad already has two cloud services present, providing an alternative to Mumbai as a top Indian market with cloud access.

Milan, Bogota, Malaysia and Saudi Arabia rose to have one or more cloud providers expand their footprints in those markets.

#### TOP MARKETS

Virginia

lowa

Dublin

Columbus

Amsterdam

Oregon

North / South Carolina

Dallas

Quincy

Singapore

# REGULATIONS & INCENTIVES

A strong package of data center incentives signals that not only is a local area amenable to supporting the data center industry, but that there are likely existing relationships with local utilities and communities to allow for such development to continue at large scale. Incentives come in many forms, though mainly involve tax relief from property taxes, value added or sales taxes, discounted power with usage of renewables, and other financial support from typical rates charged for smaller- scale purchases. As the largest data center campuses cost nine figures and beyond over time, this tax support enables areas to be considered for development more quickly with long-term expansions planned well in advance.

Americas: Incentives for data center development have recently been added or updated in several states including Pennsylvania and Arkansas. Incentives at a market level have also increased in some cases. However, several submarkets in Northern Virginia and the Pacific Northwest have begun to see local pushback against both development and incentives for data centers.

APAC: With robust data center growth, Singapore, Sydney, Melbourne and Hong Kong established data center policies with strong incentive structures. Additionally, more emergent markets in the region have started to consider potential incentive structures, with a number using free enterprise zone policies along with additional tax relief.

EMEA: As a result of the European Union, incentives between European countries are carefully regulated, Existing incentive structures focus on green data center construction and renewable energy usage. Certain Nordic markets, such as Reykjavik, Oslo, and Stockholm offer packages that lower taxes or provide incentives for using renewables. In France, both Paris and Marseille also offer benefits for those who acquire renewable energy for their projects.

Tax support enables areas to be considered for development more quickly with long-term expansions planned well in advance.

#### TOP MARKETS

Singapore

Sydney

Melbourne

Amsterdam

Toronto

Stockholm

Montreal

Dublin

Hong Kong

London

# RENEWABLE POWER OPTIONS

Recent news regarding the lack of progress on carbon emission reduction continues to focus minds on the rapidly increasing need to derive efficiencies from all industries globally, with data centers seen as a key sector. Rising energy demands require a concerted effort to reduce carbon impact. While many industries will have considerable difficulty reducing their carbon footprint, as a high-tech and multilayered asset class data centers have many opportunities to do so, including immersion/liquid cooling, artificial intelligence to manage data center workloads, sourcing renewable construction materials, and much more. These methods are excellent for the environment, and in turn, deliver lower operating costs over the life of the asset, which in the largest data centers can be well past nine figures. Increasingly, creative methods are being discovered to better utilize all parts of a data center, expanding to the reuse of waste heat to warm nearby homes.

As noted in the 2023 Report, the largest hyperscale tenants have all committed to reducing their carbon footprint in all facets of operations, with data centers a primary concern. With 2030 Carbon Net Zero goals on the very near horizon, many hyperscale self-builds and

larger-scale developments are being paired with new renewable energy infrastructure development. In multiple instances, wind and solar farm sites are planned alongside 100MW+ deployments. The ability to build out energy infrastructure is becoming a vital component for the largest facilities.

In this report, we've updated scoring to reflect the latest renewable percentage for key markets across the globe. For cities that have committed to fully renewable power, including Montreal, Sydney, Oslo and Reykjavik, this means abundant hydropower and utilities that are able to tap this energy accordingly. With the abundant hydropower in the Pacific Northwest, Vancouver and Seattle follow closely behind.

The largest hyperscale tenants have all committed to reducing their carbon footprint in all facets of operations, with data centers a primary focus.

#### TOP MARKETS

Montreal

Copenhagen

Vancouver

Stockholm

Oregon

Oslo

Silicon Valley

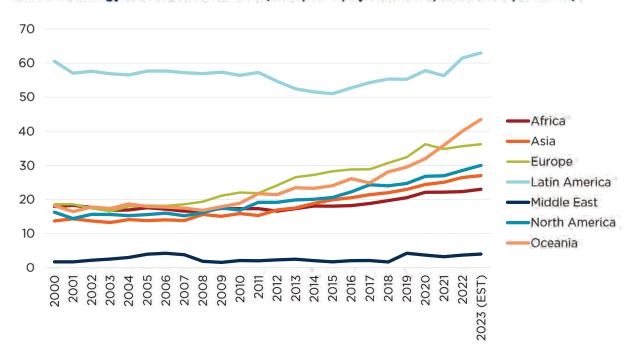
Mumbai

Sydney

Singapore

# RENEWABLE POWER OPTIONS

% of Total Energy Fuel Mix is Renewable (Solar, Wind, Hydroelectric, Geothermal, or Other)



Source: Cushman & Wakefield Research, Ember Climate, note; renewable % does not include nuclear

CUSHMAN & WAKEFIELD | DATA CENTER ADVISORY GROUP



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### POWER COST

Analysis of data center costs often focus on initial capital expenditure with the costs of planning, permitting, acquiring land, building construction and potentially substations and fiber extensions resulting in a considerable barrier to entry of circa \$10-12M per MW. These initial costs end up as a small fraction of the overall operating expenditure over the life of the building, as the consistent need for increasing power over several phases of expansion can lead to spiraling power needs.

As noted in other sections of this report, new technology (or the better use of current technology) from artificial intelligence to predict workload needs and more sophisticated forms of cooling can assist with saving power costs, particularly for the increasingly dense workloads favored by the

heaviest users. Those fortunate enough to operate in certain climates are also able to utilize free cooling in the evenings, with many of these cooler areas also using lower- cost hydropower. The benefit of renewable hydropower cannot be understated; not only does this assist in lowering the total carbon footprint of a data center, it also is available at far lower cost than other methods with a concurrently lower cost of total operating expenditure,

Power costs saw a substantial jump across a multitude of markets over the past year, though have since moderated their growth as energy markets have normalized. For more of an in-depth look at power pricing changes, readers can look into our Power and Lease Pricing Outlook.

New technology (or the better use of current technology) from artificial intelligence to predict workload needs and more sophisticated forms of cooling can assist with saving power costs.

#### TOP MARKETS

Doha

Quincy, WA

Vancouver

Stockholm

Batam

Jakarta

Paris

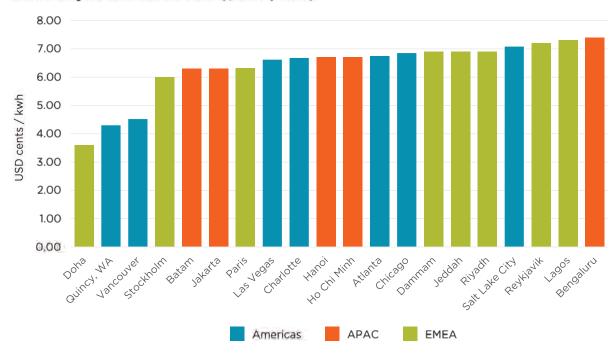
Las Vegas

North / South Carolina

Dallas

## **POWER** COST

#### Markets by Lowest Power Cost (\$ USD / kwh)



Source: Cushman & Wakefield Research, findernergy.com, local utilities & government agencies. All are annual average prices as of EOY 2023. Industrial prices for larger-sized power tiers were utilized where available



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### REDUCED ENVIRONMENTAL RISK

While sustainability comes in many forms, the need to locate data centers in areas which are safe from natural and other disasters is crucial to maintain uptime, particularly if other sectors of the economy are disrupted. The location of gas mains must be scrutinized, flight paths near airports must be reviewed, and a full analysis of the possibilities of failure must be accounted for via engineering and other studies before a site can be selected and construction can begin. As most large metropolitan areas have some or all these preexisting risks, data center builds in densely populated areas come with additional layers of concern beyond those in more rural locations.

Flood maps were reviewed for each facility to determine if the building sits in a 100- year floodplain (a 1% or greater chance of severe flooding each year) or in a 500-year floodplain (a 0.2% chance of severe flooding).

With sea levels rising in coming years due to global warming, many coastal cities may experience heavier flooding. Data centers located in these areas may come under greater peril. Certain cities have succeeded in locating data centers entirely outside of floodplains, including Dublin, Singapore, Mumbai, Denver, Columbus, Vancouver, Madrid, Johannesburg, Queretaro, Oslo, Osaka, Marseille, Lagos, Bangalore, Kuala Lumpur, and Nairobi. As this list shows, data centers can be constructed in coastal cities and still be located away from floodwaters with careful planning.

Earthquake risk is a danger to all buildings, with data centers constructed in areas prone to seismic activity requiring additional support structure. Many organizations that choose to have their main data center in a seismically active area ensure that a full disaster recovery facility exists for backup

purposes in a secondary market, as major earthquakes can prove catastrophic for equipment and business operations alike. Cities studied with the lowest earthquake risk include several primary and secondary markets across Europe (Dublin, Amsterdam, Paris, Madrid, Warsaw, Oslo, Berlin, Stockholm), along with Dallas, Hong Kong, Seoul, and Lagos.

Tornadoes and hurricanes can bring equally catastrophic damage to an area, tearing through buildings and downing power lines and entire electrical grids. As with data centers located in earthquake zones, many organizations choose to have a disaster recovery location outside the area, as obtaining power after such an event can prove problematic. Most locations across Europe and the western United States are free of this risk, as are Vancouver, Singapore, and newly reviewed markets Nairobi and Santiago.

#### BEST MARKETS

Abu Dhabi

Vienna

Madrid

Berlin

Prague

New York / New Jersey

Denver

Melbourne

Brussels

Paris

### **TAXES**

A sales tax is a payment to a local or national government for the total of goods sold, while a value-added tax is paid by the ultimate user at the end of the value chain.

While incentive packages to relieve overall tax burden on a project are attractors for data center development, new phases or smaller builds may not qualify for minimum thresholds to achieve this relief. These projects require the purchase of the same materials (generators, cooling systems, servers, racks and more) but may have to pay full sales or value-added taxes on the costs of all goods purchased. A sales tax is a payment to a local or national government for the total of goods sold, while a value-added tax is paid by the ultimate user at the end of the value chain. Both can rapidly add up as materials are purchased over the cost of a project.

As noted in previous editions of this report, two markets covered have neither of these taxes: Hong Kong and Oregon, Hong Kong is a global financial and business capital, with a long history of probusiness policies and an accordingly robust data center sector.

Oregon is a rapidly growing data center market on the west coast of the United States, with dense fiber and sites available in the local-market cluster in the suburban Hillsboro,

Other large markets have continued to enjoy lower taxation, including the world's largest in Northern Virginia, with Singapore and the data center cluster in Northern New Jersey also offering lower taxes than many primary data center locations.

#### TOP MARKETS

Oregon

Hong Kong

Virginia

Johor

Kuala Lumpur

Austin

Boston

New York - New Jersey

Bangkok

Columbus

## WATER AVAILABILITY

As noted, server rack densities are poised to jump dramatically with new requirements for both cloud and Al deployments. As these densities increase, we can expect cooling requirements to correspondingly rise. Data center designers and operators have already been in the midst of adapting to the new requirements, with new "direct-to-the-chip" cooling becoming increasingly common. Ever wary of shifting trends and requirements, a number of data centers are now designed with both liquid and air cooling options.

Other operators have tested a variety of novel immersion and other cooling technologies, seeking to optimize cost, temperature control or sustainability. Not all of these new technologies with require the use of water. Mineral oil and other chemical coolants are also being deployed through

various methods. Even as technology shifts rapidly, access to water can remain a key consideration given how quickly density requirements have been rising. Operators located in deserts or undergoing severe drought conditions will likely face headwinds to acquiring the sufficient water rights to utilize water cooling on a hyperscale data center.

With cooling requirements rising, access to water is becoming increasingly critical for data centers across a variety of markets

#### TOP MARKETS

Oslo

Prague

Singapore

Kansas City

Dublin

Toronto

Atlanta

Stockholm

Kuala Lumpur

Johor



## **CASE NO. EO-2025-0154**

**APPENDIX 2** 

**SCHEDULE 7** 

HAS BEEN DEEMED

**CONFIDENTIAL** 

IN ITS ENTIRETY

| 1                                | Question:0002 - Anticipated treatment – Interim Capacity rider  |
|----------------------------------|---|
| 2                                | Question:0003 - Interim Capacity Charge - timing1   |
| 3                                | Question:0003.1 - Prudency of Interim Capacity Charge Term2   |
| 4                                | Question:0005 - Future CCOS termination charge revenues   |
| 5                                | Question:0006 - Anticipated CCOS treatment of capacity reduction fee revenues 2   |
| 6                                | Question:0007 - Re-assigned reduced capacity revenues   |
| 7                                | Question:0008 - System Support rider  |
| 8                                | Question:0010 - Schedule SR revenues  |
| 9                                | Question:0010 Schedule SK revenues  Question:0011 - Revenue treatment – rate elements and charge  |
| 10                               | Question.0011 - Revenue treatment – rate elements and charge  |
| 10                               |   |
| 11                               | Question:0002 - Anticipated treatment – Interim Capacity rider  |
| 12<br>13<br>14<br>15<br>16<br>17 | Please explain the anticipated treatment of costs and revenues if the Interim Capacity rider is utilized. Specifically, confirm that additional capacity expenses necessary for SPP resource adequacy requirements prior to the acquisition of additional generation capacity will be passed through the utility's Fuel Adjustment Clause (FAC). If such expenses will not be passed through the FAC, please explain how such expenses will be treated. Please explain how Interim Capacity rider revenue will be recorded and how Evergy will request it be treated in rate cases. |
| 19                               | Response:   |
| 20<br>21<br>22<br>23<br>24       | Costs associated with a bilateral interim capacity agreement will be recorded to the Purchased Capacity accounts. Customer demand charges will be recorded to retail revenues. It is expected that the costs and revenues will be equal.  |
| 25<br>26<br>27<br>28<br>29       | Interim Capacity will be treated consistent with the current FAC tariff. It is expected that the capacity will be for terms greater than one year. Currently, capacity with this term duration is not included in the FAC. Should the FAC statutes or regulations change to include longer term capacity, the Company would revise its FAC tariff to exclude Interim Capacity obtained for Schedule LLPS customers.   |
| 31<br>32                         | Within a rate case, the costs and revenues will appear within Purchased Capacity, but for timing, the two should net to near zero.  |
| 33                               | Question:0003 - Interim Capacity Charge - timing  |
| 34<br>35<br>36                   | Does Evergy intend to recover an Interim Capacity Charge after the customer's load is considered in the IRP but prior to acquisition of incremental capacity necessary to meet additional SPP RA requirements for the additional load?  |
| 37                               | Response:   |
| 38<br>39<br>40                   | It is expected that Interim Capacity will be limited in duration and targeted to address the period between the date when the customer receives service, and the Company system is able to  |

support. It is expected there will be some limited overlap to ensure continuity of service. The Customer and Company will agree on the term for the Interim Capacity charge.

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#### Question: 0003.1 - Prudency of Interim Capacity Charge Term

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In its response to DR 3, Evergy states "The Customer and Company will agree on the term for the Interim Capacity charge." Will the Commission have oversight of the term agreed upon by the Company and the Customer? How will this oversight be exercised? Will the term length be subject to a prudency review in rate cases?

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#### **Response:**

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It is our expectation that any agreement for Interim Capacity will follow the Company's current processes and controls for bilateral agreements. The Commission will have the same oversight for Interim Capacity as it does for other bilateral agreements executed by the Company. Similarly, the terms would be subject to prudency review to the extent other bilateral agreements are examined. I would note that under the proposed Interim Capacity mechanics, the respective Schedule LLPS customer would be responsible for the full cost and acceptant of all terms of the Interim Capacity.

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#### **Question:0005 - Future CCOS termination charge revenues**

20 21 Please explain the anticipated treatment of termination charge revenues for accounting purposes , ratemaking treatment, and Evergy-sponsored Class Cost of Service studies.

22 23 24 **Response:** 

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The Company proposes to treat the termination charge as revenues. For accounting purposes, the proposed treatment would be to treat it as normal tariff-based revenue. However, the final determination of accounting treatment will be based on the language in the final approved tariff. [SLKL1] Within class cost of service and for ratemaking purposes we expect the revenues will be uniquely identified and allocated to all classes based on class revenues less all LLPS-related fees.

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#### Question: 0006 - Anticipated CCOS treatment of capacity reduction fee revenues

31 32 Please explain the anticipated treatment of capacity reduction fee revenues for accounting purposes, ratemaking treatment, and Evergy-sponsored Class Cost of Service studies.

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#### **Response:**

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The Company proposes to treat the capacity reduction fees as revenues. For accounting purposes, the proposed treatment would be to treat it as normal tariff-based revenue. However, the final determination of accounting treatment will be based on the language in the final approved tariff. [SLKL2] Within class cost of service and for ratemaking purposes we expect the revenues will be uniquely identified and allocated to all classes based on class revenues less all LLPS-related fees.

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Please explain how re-assigned reduced capacity revenues used to mitigate capacity reduction fee amounts will be treated for accounting purposes, what ratemaking treatment will be expected, and how Evergy will treat those revenues for Evergy-sponsored Class Cost of Service studies.

### **Response:**

The Company proposes to treat the capacity reduction-related fees as revenues. For accounting purposes, the proposed treatment would be to treat it as normal tariff-based revenue. However, the final determination of accounting treatment will be based on the language in the final approved tariff. SLKL3 Within class cost of service and for ratemaking purposes it is expected the revenues will be uniquely identified and allocated to all classes based on class revenues less all LLPS-related fees.

#### Question: 0008 - System Support rider

Please explain how System Support rider revenues will be recorded and treated for ratemaking purposes.

#### **Response:**

The Company proposes to treat the System Support Rider revenues as revenues. For accounting purposes, the proposed treatment would be to treat it as normal tariff-based revenue. However, the final determination of accounting treatment will be based on the language in the final approved tariff. SLKL4 Within class cost of service and for ratemaking purposes we expect the revenues will be uniquely identified and allocated to all classes based on class revenues less all LLPS base rate revenues.

#### **Ouestion:0010 - Schedule SR revenues**

Please refer to Lutz testimony at page 33. Please explain whether, within the proposed CCOS treatment, the revenue contribution from Schedule SR referenced is annual revenues associated with a given year, or cumulative revenues from the time such revenues initially accrue? Please explain whether these revenues will be treated as revenues or as an offset to ratebase for CCOS purposes under the proposed treatment. **Response:** 

#### The revenues would be for a given test year. Within the CCOS, the System Support Rider revenue would be treated as revenues allocated to other non-LLPS customers.

#### **Question:0011 - Revenue treatment – rate elements and charge**

For each rate element or charge described in each proposed tariff, please describe the proposed revenue treatment for accounting purposes. Please include, for each rate element and charge, whether it is Evergy's intention that any revenues received will be capitalized as an offset to ratebase, run through the FAC or RESRAM, deferred for amortization, or treated as anything

other than ordinary revenue. If such treatment will vary prior to the first rate case recognizing 2 an LLPS customer and after such rate case, please explain the applicable treatment before and 3 after such rate case. 4 **Response:** 5 6 Barring some unexpected change in the nature of these costs, the proposed treatment would be 7 to treat all revenues from customer, grid, demand, reactive demand, and energy charges 8 consistent with treatments used for like charges in other rates today, generally as ordinary tariff-9 based revenue. However, the final determination of accounting treatment will be based on the 10 language in the final approved tariffs. [SLKL5] 11 12 For the other rate elements, 13 Schedule LLPS (Large Load Power Service) 14 o Interim Capacity: ordinary revenue o Fees: ordinary revenue 15 o Collateral: Dependent on the form of the collateral. Non-cash collateral is not 16 17 recognized as revenue. 18 Schedule SR (System Support Rider) 19 o SR Charge: ordinary revenue Schedule CCR (Customer Capacity Rider) 20 o CCR Credit: no revenue expected/reduction of revenue 21 Schedule DRLR (Demand Response & Local Generation Rider) 22 23 o Reduction Credit: ordinary revenue 24 Schedule CER (Clean Energy Choice Rider) 25 o CER Charge: contribution to work in progress Schedule RENEW (Renewable Energy Program Rider) 26 o Renewable Energy Charge: ordinary revenue, will be included in FAC as an 27 28 offset to costs 29 Schedule AEC (Alternative Energy Credit Rider) o AEC Charge: ordinary revenue, will be included in FAC as an offset to costs 30 31 Schedule GSR (Green Solution Connections Rider)

o GSR Rate: ordinary revenue, will be included in FAC as an offset to costs

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### CASE NO. EO-2025-0154

**APPENDIX 2** 

**SCHEDULE 9** 

HAS BEEN DEEMED

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IN ITS ENTIRETY

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CA =

 The purpose of this policy is to set forth the service connection and distribution system extension requirements when one (1) or more applicants request overhead or underground electric service at premises not connected to Company's distribution system or request an alteration in service to premises already connected where such change necessitates additional investment.

#### 7.02 Definition of Terms

- A. Applicant: The developer, builder, or other person, partnership, association, firm, private or public corporation, trust, estate, political subdivision, governmental agency or other legal entity recognized by law applying for the construction of an electric Distribution Extension, Extension Upgrade, or Relocation.
- B. Basic Extension Request: A request by Applicant for a <u>Transmission or</u> Distribution Extension for which Company specified facilities are provided free of charge to the Applicant.
- C. Construction Allowance: The cost of that portion of the Distribution Extension which is for economically justifiable and necessary construction and which is made by Company. The formula used to determine the appropriate Construction Allowance will be based on Company's feasibility model. Generally, the formula used by the feasibility model is the Estimated Margin divided by the Fixed Carrying Cost percentage as measured over the first five (5) year life of the Distribution Extension.

<u>SUM (EM1 + EM2 + EM3 + EM4 + EM5)</u> SUM (FCC1 + FCC2 + FCC3 + FCC4 + FCC5)

Where, CA = Construction Allowance;

EM = Estimated Margin;

FCC = Fixed Carrying Cost;

- D. <u>Distribution</u> Construction Charges: That portion of the Distribution Extension's construction costs for which the Applicant is responsible. The Electric Service Standards and the provisions in this extension policy specify which segments of service shall be furnished by Applicant and which segments are provided by Company at cost to Applicant. These charges may consist of the following components:
- (1) Nonrefundable charges representing the portion of <u>Distribution</u> Construction Charges which are not supported by the expected revenue stream or for non-standard costs associated with the Distribution Extension and will not be reimbursable to Applicant. (Exception: Non-standard costs for Excess Facilities may be recovered on a surcharge basis as mutually agreed to by Applicant and Company and specified in the Facilities Extension Agreement.)
- (2) Refundable charges representing the portion of <u>Distribution</u> Construction Charges that may be reimbursed to the Applicant during the Open Extension Period, dependent upon the Applicant's requisite performance as outlined in the Facilities Extension Agreement.
- E. Distribution Extension: Distribution facilities including primary and secondary distribution lines, transformers, service laterals, and all appurtenant facilities and meter installation facilities installed by Company.

- Extension's construction costs for which the Applicant is responsible. These charges shall consist of the following components:
- (1) Nonrefundable charges shall be the portion of Transmission Construction Charges for infrastructure that is owned and under the functional control of Evergy Missouri West, which would not have been constructed but-for the provision of service to the Applicant.
- (2) Refundable charges shall be the portion of Transmission Construction Charges that may be reimbursed to the Applicant during the Open Extension Period, and shall consist of (a) the portion of Transmission Construction Charges for infrastructure that is owned and under the functional control of Evergy Missouri West, which has been constructed in excess of the level of infrastructure that would not have been constructed but-for the provision of service to the Applicant, and (b) the portion of Transmission Construction Charges for infrastructure that is not under the functional control of Evergy Missouri West, but for which Evergy Missouri West is compensated by entities other than its Missouri retail ratepayers.
- G. Transmission Extension: All substations, conductors, devices, poles, conduits, transformers, and all appurtenant facilities and meter installation facilities installed by Company or for which the Company is financially responsible for installation, whether or not under the functional control of the Company. The Transmission Extension shall also include any and all equipment necessary to ensure adequate power quality in the surrounding service area with the addition of the Applicant's load.
- <u>H.</u> Electric Service Standards: Company's Electric Service Standards available upon request to any Applicant, <u>and</u> defines Company's uniform standards and requirements for installation, wiring and system design.
- GI. Estimated <u>Distribution</u> Construction Costs: The Estimated <u>Distribution</u>
  Construction Costs shall be the necessary cost of the Distribution Extension and shall include the cost of all materials, labor, rights-of-way, trench and backfill, together with all incidental underground and overhead expenses connected therewith. Where special items, not incorporated in the Electric Service Standards, are required to meet construction conditions, the cost thereof shall also be included as a non-standard cost.
- HJ. Estimated Transmission Construction Costs: The Transmission Construction Costs shall be the necessary cost of the Transmission Extension and shall include the cost of all materials, labor, rights-of-way, trench and backfill, together with all incidental underground and overhead expenses connected therewith. Where special items, not incorporated in the Electric Service Standards, are required to meet construction conditions, the cost thereof shall also be included as a non-standard cost.
- <u>K</u>. Estimated Margin: The Estimated Margin will be determined by first multiplying the effective rates for each customer class by the estimated incremental usage and then subtracting 1) applicable margin allocation for network and infrastructure support costs; and 2) incremental power and energy supply costs.
- <u>IL</u>. Extension Completion Date: The date on which the construction of a Distribution Extension, <u>Transmission Extension</u>, Extension Upgrade or Relocation is completed as shown by Company records.
- JM. Extension Upgrade: The increase in capacity of existing electric distribution, substation, or transmission facilities necessitated by Applicant's estimated electric requirements and for which Company determines that such facilities can be reasonably installed.

- KN. Facilities Extension Agreement: Written agreement between Applicant and Company setting out the contractual provisions of Construction Allowance, Construction Charges, payment arrangements, the Open Extension Period, etc. in accordance with this extension policy.
- <u>LO</u>. Fixed Carrying Cost: Company's cost of capital to provide the requisite return on its investment as well as the costs for depreciation, property taxes and property insurance.
- MP. Indeterminate Service: Service that is of an indefinite or indeterminate nature where the amount and permanency of service cannot be reasonably assured in order to predict the revenue stream from Applicant. For purposes of uniform application, "Indeterminate Service" may include such service as may be required for the speculative development of property, mobile buildings, mines, quarries, oil or gas wells, sand pits and other ventures that may reasonably be deemed to be speculative in nature. Customers taking service on the Limited Large Power, Special Incremental Load, and Market Tariff, or any other customer taking service at a voltage in excess of 34kV after January 1, 2026, shall be considered Indeterminate Service.
- NQ. Open Extension Period: The period of time, five (5) years, during which Company shall calculate and pay refunds of Construction Charges according to the provisions of this extension policy. The five (5) year period begins on the Extension Completion Date.
- OR. Permanent Service: Overhead or underground electric line extensions for primary or secondary service where the use of service is to be permanent and <u>not Indeterminate or Temporary</u>, and where a continuous return to Company of sufficient revenue to support the necessary investment is reasonably assured.
- PS. Temporary Service: Any service that is of a known temporary nature, excluding service for construction power, and shall not be continued for a period longer than twelve (12) months.

#### 7.03 General Provisions

- A. Company at its sole discretion, after consideration of Applicant's electric requirements, will designate the class of service requested as Permanent, Indeterminate or Temporary in accordance with the definitions set forth herein.
- B. The determination of facility type and routing will be made by Company to be consistent with the characteristics of an Applicant's requirements and for the territory in which service is to be rendered and the nature of Company's existing facilities in the area.
- C. The facilities provided will be constructed to conform to the Electric Service Standards. Except as otherwise provided (Section 7.09 Excess Facilities), the type of construction required to serve the Applicant appropriately will be determined by Company.
- D. Facilities Extension Agreements will be based upon Company's Estimated Construction Cost for providing the facilities necessary to supply the service requested by Applicant. Company shall exercise due diligence with respect to providing the estimate of total costs to the customer. If it is necessary or desirable to use private, public and/or government rights-of-way to furnish service, Applicant may, at Company's discretion, as otherwise required by this tariff, be required to pay the cost of providing such rights-of-way. All Distribution Extensions and Transmission Extensions, with the exception of service conduits, provided wholly, or in part, at the expense of an Applicant shall become the property of Company once approved and accepted by Company.

- E. Company shall construct, own, operate and maintain new overhead and/or underground <u>transmission facilities</u>, feeder lines, service lines and related distribution system facilities only on or along public streets, roads and highways which Company has the legal right to occupy, and on or along private property across which right-of-ways and easements satisfactory to Company have been received.
- F. Rights-of-way and easements which are satisfactory to Company including those as may be required for street lighting, must be furnished by the Applicant in reasonable time to meet construction and service requirements and before Company shall be required to commence its installation; such rights-of-way and easements must be cleared of trees, tree stumps, and other obstructions, and graded to within six (6) inches of final grade by Applicant at no charge to Company. Such clearance and grading must be maintained by the Applicant during construction by Company. If the grade is changed subsequent to construction of the transmission or distribution system in such a way as to require relocation of any of the electric facilities, the estimated cost of such relocation shall be paid by the Applicant or its successors as a non-refundable Construction Charge.
- G. An additional Construction Charge shall be paid by the Applicant to Company for any ditching required to be performed by Company due to soil conditions including, but not limited to, the presence of rock or other environmental issues which prevent the use of normal trenching and backfilling practices used in trenchable soil. The charge under this provision shall be the estimated trenching and backfilling costs to be incurred by Company including conduit or padding for feeder lines, if required, less the estimated cost of normal trenching and backfilling. Applicant may be required to perform said ditching.

#### 7.04 Permanent Service

- A. Each application to Company for electric service of a permanent nature to premises requiring extension of Company's existing distribution facilities will be evaluated by Company in order that Company may determine the amount of investment (Construction Allowance) warranted by Company in making such extension. In the absence of special financing arrangements between the Applicant and Company, the Construction Charges as specified in the Facilities Extension Agreement shall be paid by the Applicant to Company before Company's construction commences.
- B. The Construction Charges may be refundable in part, or in their entirety, to the original Applicant during the Open Extension Period. The Facilities Extension Agreement, to be executed by Applicant and Company, shall outline the applicable refund mechanism as related to the performance required by Applicant. In no event shall refunds aggregate an amount greater than the Construction Charges. Refundable Construction Charges shall not accrue interest. No interest in any potential refunds may be assigned. Applicant shall be responsible for notifying Company within six (6) months time of qualifying permanent loads connected to Company's system. On a periodic basis, Company shall make the applicable refund(s) as specified in the Facilities Extension Agreement. No refunds will be made for performance after the Open Extension Period.
- C. Company will evaluate the feasibility of growth for an existing area when determining the amount of <u>Distribution</u> Construction Charges. Where sufficient growth is anticipated, the extension may be made without an additional charge or at a reduced rate.

A. For all types of electric service of an indeterminate character, Applicant shall be required to pay to Company in advance of Company's construction all of the Estimated Construction Costs as Construction Charges as outlined in the Facilities Extension Agreement.

- B. The Construction Charges will be considered non-refundable unless, at the sole discretion of Company and
- (1) upon written request of the Applicant taking service at a voltage below 34 kV, the Applicant is reclassified to Permanent Service during the Open Extension Period. In that event, the refund procedure applicable to Permanent Service Applicants will apply. Or,
- (3) if the Applicant takes service at a voltage in excess of 34 kV, to the extent that future Applicants request service which utilizes the infrastructure referenced in 7.02.F.(2) of this tariff within the Open Extension Period, payment for such infrastructure, when obtained, shall be provided to the Applicant who initially funded such infrastructure.
- C. Where the length or cost of an extension is so great and the anticipated revenue to be derived is so limited as to make it doubtful whether the necessary operating costs on the investment would be recovered an additional charge to Applicant may be required. The additional charge will cover the cost of insurance, cost of removal, license and fees, taxes, operation and maintenance and appropriate allocable administrative and general expenses of such facilities.

#### 7.06 Temporary Service:

For electric service of a temporary nature, Applicant shall be required to pay to Company as non-refundable Construction Charges as outlined in the Facilities Extension Agreement an amount equal to the estimated net cost of installing, owning and removing the Distribution Extension including non-salvageable materials. Applicant shall pay Company before Company's construction commences. This classification does not include temporary meter sets furnished to service an Applicant's construction requirements. Such temporary service consists of 2-20 Amp, 120 Volt Ground-Fault Circuit Interrupter Outlets in a self-contained meter stand.

#### 7.07 Extension Upgrade:

Where an electric distribution Extension Upgrade is required to serve a non-residential customer's load requirements, the Facilities Extension Agreement between Company and Applicant shall apply the Estimated Construction Costs, Construction Allowance, and Construction Charges provisions contained in this extension policy to the Extension Upgrade.

#### 7.08 Relocation or Conversion Request

An Applicant desiring to have Company's existing overhead facilities installed underground or to have existing overhead or underground facilities relocated may request Company to make such changes. If Company determines that such conversion or relocation can reasonably be made, Company will make such conversion or relocation on the following basis: The cost of removing and relocating such facilities, the related net cost of non-salvageable materials and the cost of any new facilities to be installed shall be paid by the Applicant as non-refundable Construction Charges as outlined in the Facilities Extension Agreement.

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In those instances where Company chooses to provide facilities at Applicant's request in variance with the Electric Service Standards, Applicant shall be required to pay Company for the cost of such facilities, and to pay Company a Nonrefundable Construction Charge or a surcharge as outlined in the Facilities Extension Agreement. The charge is designed to recover the cost of insurance, replacement (or cost of removal);), license and fees, taxes, operation and maintenance and appropriate allocable administrative and general expenses associated with such distribution facilities.

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#### 7.10 Applicability Limitation

The applicability of this extension policy is limited by the following conditions:

A. Facilities Extension Agreement Not Timely Executed: Company's Estimated Construction Costs and Construction Charges requirements as calculated for each extension may become void, at Company's discretion, after 120 days from the time a proposed Facilities Extension Agreement is provided by Company to Applicant. If a Facilities Extension Agreement is not fully executed before that time, it may become necessary for new estimates to be made incorporating the then current construction costs and the terms and conditions of Company's extension policy as on file and in effect with the Commission at that time.

B. Accurate Estimates Doubtful -- True-Up For Actual Costs: The Estimated Construction Costs will typically be the amount used in calculating the Construction Allowance and Construction Charges. In situations where the accuracy of the estimate is known to be highly uncertain, a true up to reflect actual costs at the Extension Completion date will be made. The intention to adjust the Estimated Construction Costs to reflect actual costs shall be specified and agreed to by both Applicant and Company in the Facilities Extension Agreement.

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#### 7.11 Summary Of Policy Administration

- A. Company has segmented Applicants into the following general categories for administration of this Extension Policy and also requires Applicants to provide the specified facilities as referenced in the Electric Service Standards:
  - B. Residential Single Family
- (1) Free of Charge Basic Extension Request: All Applicants, classified as Permanent Service, will receive up to one-quarter  $(\frac{1}{4})$  mile extension from the existing distribution lines. The extension may include provision to the Customer's property line, onto the Customers property, or a combination providing extension to the Customer's property line and onto the Customer's property.

The Company will build the first one-eight (1/8) mile and the last one-eighth (1/8)mile of single-phase line per residential or rural residential customer under its established rates and minimum charges. In the event the line extension exceeds one-quarter (1/4) mile per residential or rural residential Customer, there shall be a monthly Customer Charge or an increase in the existing monthly Customer Charge. The amount of the Customer Charge or increase to an existing monthly Customer Charge may be paid in equal installments over sixty consecutive bills.

(2) Excess Charge - Non Basic Extension Request: Applicants requiring a Distribution Extension in excess of the basic installed facilities which are provided free of charge may incur a non-refundable construction charge as described below:

- (a) Individual Projects: Projects defined as including at least one (1) and no more than four (4) residential dwelling(s). The applicable Construction Allowance will be subtracted from the Estimated Construction Costs for the Applicant's project in order to determine the Nonrefundable Construction Charge to be paid by Applicant to Company. The cost of the distribution extension on public right-of-way will be included in the Estimated Construction Costs.
- (b) Subdivision Projects: Projects defined as including five (5) or more residential dwellings. The Nonrefundable Construction Charge is calculated based on a per lot basis and is determined by subtracting the applicable standard Construction Allowance from the standard Estimated Construction Costs. Applicant will also be responsible for all Estimated Construction Costs related to the cost of connecting the subdivision project to Company's existing and adequate distribution facilities when the length is greater than 100 feet. Applicant will pay these costs to Company as a Nonrefundable Construction Charge.
- (c) Construction Allowance is set equal to the cost of facilities provided free of charge plus standard adders, determined from the feasibility model, based on the electric end-use and project type committed to by Applicant.
- C. Residential Multi-Family or Residential Mobile Home Trailer Parks
  All applicants, classified as permanent service, will have a Construction Allowance calculated per the feasibility model (Section 7.02 C. Construction Allowance) for the customized project. The Construction Allowance is subtracted from the Estimated Construction Cost for the Applicant's project in order to determine the Nonrefundable Construction Charge to be paid by Applicant. Applicant will also be responsible for all Estimated Construction Charges related to the cost of connecting to Company's existing and adequate distribution facilities when the length is greater than 100 feet. Applicant will pay these costs to Company as a Nonrefundable Construction Charge.
  - D. Commercial or Industrial

All applicants, classified as permanent service, will have a Construction Allowance calculated per the feasibility model (Section 7.02 C. Construction Allowance) for the customized project. The Construction Allowance is subtracted from the Estimated Construction Cost for the Applicant's project in order to determine the Nonrefundable Construction Charge to be paid by Applicant. The cost of the Distribution Extension on public right-of-way is generally included in the Estimated Construction Cost except where the Applicant requires an extension other than a standard overhead extension. Where underground service on public right-of-way is required and agreed to by Company, the Applicant will be required to pay for the required facilities as either a Nonrefundable Construction Charge or as a surcharge on its monthly bill, at Company's discretion.

#### SERVICE TO LOADS GREATER THAN 25MW

A. <u>Initial Evaluation Phase</u>. Customers, or prospective Customers seeking service for loads expected to be greater than 25 megawatts (MW) shall be subject to an initial evaluation and study by the Company prior to receiving service. <u>To begin the process</u>, <u>Ss</u>uch Customers shall notify the Company, <u>in advance</u>, concerning the expected load, project location, and project schedule. The Company will respond with an initial evaluation detailing its conditions of service <u>within fourfour ((4)) weeks</u>. <u>The Company does not provide an indicative cost estimate during this phase</u>.

- B. Project Details Phase. Customers choosing to move forward and seek service for a project shall: (1) submit proof of land rights/acquisition (2) submit a site plan (3) complete and comply with terms set forth in a Letter of Agreement and (4) submit a refundable deposit of \$200,000 that will be used to offset costs associated with project planning. Should costs exceed this deposit an additional refundable deposit of \$200,000 shall be required. Additional refundable deposits will be required such that the Customer pays all project planning costs associated with their project. Initial deposit funds not used during planning shall be refunded to the customer without interest. These Customers shall be placed in a queue based on the date on which they provided the required information and deposit. Within threethree ((3)) months of receiving customer notice to move forward, the Company shall provide an indicative price estimate for dedicated facilities and construction timeline.
  - 1. Service related to projects the Company designates as serving the community interest may be given priority in the queue and may not be required to submit a deposit. Community interest projects are those that are part of a competitive search in which the Company is competing against at least one other location for the project, the Customer reasonably demonstrates that the project will employ at least 250 permanent, full-time employees, and an accredited state or regional economic development organization certifies that the absence of a deposit and expedited timing are critical to the state winning the project. Evergy shall not provide such certification. The Company shall post a list of accredited state or regional economic development organizations on its website.
  - 2. The Company shall have sole discretion on the deposit applicability and managing projects in the queue.
- C. <u>SPP Attachment AQ Study Phase</u>. The Company will work on advanced study and scoping for up to four (4) projects at a time. Customers with projects being studied shall be notified of the study results and plans to receive service. Once an Initial Projects <u>Activities</u> Agreement is complete, the Company will send necessary details to the Southwest Power Pool ("SPP") for its review. Completed plans shall be valid for six (6)-(6) months.
- D. <u>Completion of Projects Phase</u>. Customers choosing to receive service according to these plans developed in part C shall complete the required agreements to facilitate construction and all required Service Agreements to receive service. <u>Construction agreements include (1)</u> Interconnection Agreement, (2) Right-of-Way Agreement, and/or (3) Facilities Agreement. <u>Section 9 of these Rules and Regulations discusses cost responsibility for Transmission or these Rules and Regulations discusses cost responsibility for Transmission or these receives plans and required service according to these plans developed in part C shall complete the required agreements to facilitate construction and all required Service Agreements, and/or (3) Facilities Agreement.</u>

<u>Substation Facilities Extensions.</u> The Schedule LLPS tariff and associated Service Agreement contain additional requirements for qualifying projects that must be met to receive service. Customers failing to complete these agreements within the timeframe allowedsix months may be returned to the queue.

E. SPP Submittal. Within 10 days of receiving all required agreements required in part D above, Evergy submits the formal load request to SPP. SPP is responsible for issuing notices to construct to impacted Transmission Owners.

<u>FE</u>. Additional details regarding the queue process and submission shall be posted to and updated from time to time on the resources may be found on the Company's website.