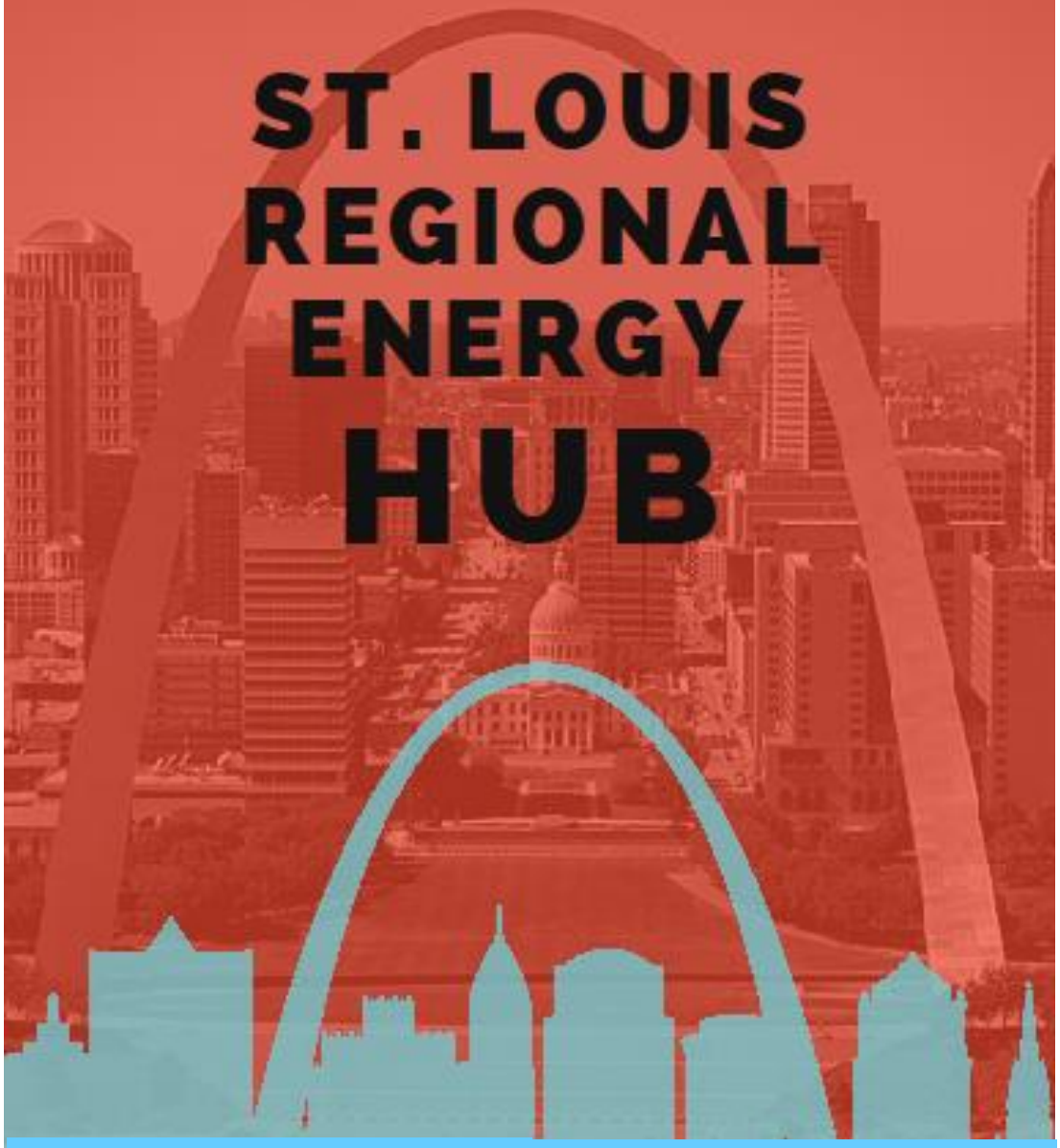
Executive Summary
2021

ST. LOUIS REGIONAL ENERGY HUB



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EXECUTIVE SUMMARY

In October 2019 the Mayor of the City of St. Louis set an ambitious goal to reduce Greenhouse Gas emissions by 100% by 2050 as part of the City's Climate Protection Initiative. One important element of achieving this goal is the Building Energy Performance Standard (BEPS) ordinance passed by the City in April 2020, taking effect spring 2021. BEPS will require large commercial, multi-family, institutional and municipal buildings (50,000 sq. ft. and above) to reduce energy use in order to meet an energy performance standard by 2025. The City of St. Louis was the first city in the Midwest and fourth jurisdiction in the nation, following New York City (NYC), Washington D.C. and Washington State, to adopt a BEPS policy.

St. Louis County is a completely separate political entity that does not include the City of St. Louis. Within St. Louis County there are 88 separate municipalities. The County Council periodically adopts building codes as prepared by the International Code Council (ICC), which releases updated codes every 3 years. In December of 2019, the County Council passed legislation to accept the ICC 2015 standards with amendments for improved energy efficiency standards. While the individual cities have the option to adopt their own building codes, most follow the St. Louis County Codes because they contract with St. Louis County for building inspections and other services.

With the creation of the BEPS in the City of St. Louis, and the growing interest in energy efficiency, leaders in St. Louis sought to join New York City and Washington D.C. to develop a regional energy hub. The St. Louis Regional Energy hub (henceforth HUB[1]) will expand existing local resources for energy efficiency and building performance through trusted, impartial and professional direct and indirect resources and services. As a neutral party dedicated to advancing innovative energy solutions in the built environment, the HUB will act as a force multiplier for climate action and local economic development by advancing building energy efficiency improvements and appropriate use of cost-effective renewable energy implementation. The HUB can serve a range of property types, owners and operators, but will be particularly relevant to -- and should prioritize -- under-resourced building owners and disadvantaged communities who may struggle to comply with the BEPS and embrace best-practice energy efficiency improvements without assistance.

While the initial focus of the HUB will be on operating under the policy and regulatory context in St. Louis City, it is important to note that, while St. Louis County has not adopted regulations like benchmarking or BEPS, many of its member municipalities strive for sustainability and the County may still make such strides. Additionally, the people who work in the Region are part of the

[1] Throughout the document, when referencing the St. Louis HUB, we will use HUB, if referring to other hubs, we will use hub.

larger metropolitan area. Therefore, it is essential that the HUB recognizes that the building industry professionals who live or work in the region may also live or work in Illinois and outlying counties. The HUB should eventually have a regional approach, recognizing that the target audience works and lives in the larger metropolitan region.

To this end, the HUB development team conducted a variety of stakeholder engagement activities to better understand the needs, opportunities and obstacles to improving building energy efficiency in the St. Louis area, as well as the potential gaps for the HUB to fill to facilitate energy efficiency improvements in the built environment including a broad survey of the building industry, targeted one-on-one interviews with local leaders, stakeholder focus groups, and targeted one-on-one interviews with national leaders. The survey was sent to hundreds of individuals and approximately 30 different associations, which distributed the survey among their memberships. The survey went live on October 28, 2020, with a total of 123 people responding.

In addition to local stakeholder engagement, the HUB development team analyzed existing hubs to determine best practices. Analysis of these hubs reveals that they offer a range of programming and services, although no hub offers everything. We categorized hub programming into five categories in order to provide a framework to evaluate the need, relevance and cost/benefit of various products and service offerings to the St. Louis market. Below is a breakdown of these five categories and how other hubs address them.

Program	Information & Resources	Events & Networking	Education & Training	Concierge Service	Financing Assistance
Seattle's Lighting Design Lab (1990)	✓	✓	✓		
NYC's BE-Ex (2010)	✓	✓	✓		
NYC's Retrofit Accelerator (2015)				✓	✓
Vancouver's ZEBx (2018)	✓	✓	✓		
DC's Building Innovation Hub					

(2020)	✓	✓			✓

Through our market engagement process, we assessed market needs as well as perceived relevance and usefulness. We gathered information on energy efficiency resources currently available in St. Louis, and we also looked to the experiences and results of other hubs. We explored options for collaboration with other organizations to develop possible execution strategies for St. Louis. We gathered initial cost estimates where possible.

To undertake a cost benefit analysis of potential HUB programming, we developed a scoring and criteria weighting approach which is depicted in the chart below. We developed scoring criteria to assess the potential benefit for each category of programming – concierge service, information and resources, financing assistance, events and networking, and education.

The scoring criteria are (1) demand based on the market engagement process, (2) ease of execution for the new HUB to deliver the programing, (3) whether the programming would fill a gap in the St. Louis market, and (4) the "impact" value other hubs have experienced using the programming.

Programming	**Demand (30%)**	**Ease of execution (25%)**	**Fills a gap (35%)**	**Impact (10%)**	**Cost $-$$$$**	**Raw Score**	**Weighted Score**
Concierge	●	◔	●	◑	$$$$	11	3.1
Financing	◑	◕	●	◔	$$	10	2.9
Info/Resources	◕	◑	◑	◕	$$	10	2.4
Events	◔	◕	○	◕	$$	7	1.4
Education	◔	◔	◔	◑	$$$	5	1.1

Based on this analysis, which is explained in more detail in the full plan, we recommend that the HUB deliver programming in three key areas: targeted ***information and resources*** through a strong web presence, a one-on-one ***concierge service*** and ***financing assistance***.

Examining these hubs and NYC specifically, we see the potential to grow in a phased approach, and if done properly, St. Louis can do it faster than NYC. We recommend standing up the HUB with initial "information and resources" programming, including information on financing retrofits. During an initial launch period of 6 to 12 months the HUB can establish its presence and solidify partnerships and funding resources. Once this is accomplished the HUB can concentrate on

developing concierge services, primarily to under-resourced building owners and disadvantaged communities to a targeted class of buildings and expand its financing programming.

While the HUB would like to deliver all possible programming, local resources will not make that possible, therefore we propose integrating and leveraging complementary community delivered programs. (We refer to this approach as a "spider-web.") Community delivered programs are those that are delivered by other existing organizations operating in the St. Louis community who are providing relevant programming related to building performance and energy efficiency and who are willing to collaborate with the HUB. By collaborating with existing entities in St. Louis, the HUB can develop a "spider-web" of partners and services to facilitate access to events, networking and educational opportunities. This way, the HUB can, both directly and through partnering with existing organizations, ensure that owners and operators in St. Louis will have access to a full suite of programming and resources to comply with BEPS and take action to save money and improve their buildings.

As part of the SWOT[2] and market analyses completed as part of this proposed plan, we determined that the local market has a number of great existing organizations that are currently serving the building community with education, training, and networking opportunities. Through extensive stakeholder engagement we have learned that while education and training centered on the BEPS will be vital to the success of the BEPS, as it was for the benchmarking effort, existing organizations already have plans to deliver such programming. While the stakeholders provided a list of organizations already providing these services, we advise that HUB staff continue to engage with local organizations to determine collaborative opportunities.

The HUB will have a limited budget for staff in its early years and will be unable to serve the diverse 3,039 building marketplace (City and County combined, buildings over 50,000 sq. ft.) at launch or even in its first few phases of operations, therefore we recommend targeting buildings in the following order of priority:

1. Buildings in the City of St. Louis that are subject to BEPS (minimum 50,000 sq. ft.), in the following order:
    - Low-performing buildings[3]
    - Buildings that have not complied with benchmarking

2. Underserved sectors in both City and County that are at least 25,000 sq. ft.
    - Non-profit owners/operators of affordable housing serving low-to-moderate income residents
    - Other underserved property types (social service organizations, houses of worship, LMI community centers and facilities, local non-profits, non-profit

[2] SWOT refers to "strengths, weaknesses, opportunities and threats," and is a common standard of analysis supporting business planning and organizational development.

[3] The Building Division has identified these buildings, but public specific definitions are to be determined by the City of St. Louis, but it will likely be tied to Energy Use Intensity (EUI), thus building performance and EUI rating as compared by region and sector.

hospitals and health facilities, businesses providing essential services to underserved communities, MWBE businesses, etc.)
    - Private owners/operators of affordable housing
3. Buildings over 50,000 sq. ft. in St. Louis County,
4. Public housing authorities and HUD properties (lower in priority due to complexity)

The targeting suggested above is not meant to imply that owners seeking out information and services from the HUB should be turned away if they are not in the target groups. We expect a wide variety of owners and operators in the City and County of St. Louis to utilize the HUB. Rather, we recommend that in developing programming and particularly in designing marketing strategies and marketing collateral and in conducting outreach efforts, the HUB should strategically target and emphasize these sectors. We further recommend that the HUB explicitly consider underserved building owners/operators and disadvantaged communities in every aspect of programming development, to ensure that the needs of these sectors are well-represented in the resources and services delivered by the HUB.

Responding to the research and stakeholder input, the need for targeted information and resources was ranked highly. Information and resources about energy efficiency are already present to a degree in the St. Louis market[4]. That said, these resources are not centralized, comprehensive, nor contextualized for BEPS. The new HUB can act as a centralized, trusted resource; it can create new information where not duplicative; it can direct users to existing resources; and, it should avoid adopting an advocacy posture. The HUB should be trusted by all as a high-quality, neutral, pragmatically helpful resource. An effective, informative website can be launched relatively quickly and will serve as a "draw" for a future concierge service. The HUB should prioritize the development of and delivery of information through a deep website that includes case studies, technology and energy system primers, policy and regulation briefs, best practice guides, event recordings, calendar of events and trainings, directories of vendors and service providers, an automatic vendor matchmaking tool and a newsletter. The most cost effective and efficient way to develop this substantive website resource would be through a contractual partnership with existing hubs and the Leon Lowenstein Foundation grant awarded to the Institute for Market Transformation (IMT) provides such a way with IMT and the Kansas City BE-Ex, currently under development. It is vital the HUB serve the underserved and under-resourced sectors, and to do this we recommend the online library have dedicated materials for these sectors, and that it proactively publishes case studies to reflect the challenges in these sectors, denote vendors experienced in these sectors and their Minority/Women-owned Business Enterprises (MWBE) status, and collaborate with sponsors on special programs or events.

As building owners seek to comply with the BEPS, they will need support. Our evaluation of programming options for the HUB resulted in the highest score for a concierge service. In this discussion, concierge service refers to personalized, one-on-one advice and support to facilitate the

[4] For current organizations offering resources in the St. Louis region see Appendices A, E, and F. Organizations include: City of St. Louis, USGBC-Missouri Gateway Chapter, EarthWays Center of Missouri Botanical Garden, OneSTL, Washington University in St. Louis, Set the PACE St. Louis, Renew Missouri. Ameren Missouri's BizSavers, and Spire rebates.

process of assessing the need and opportunity for energy efficiency improvements in a given building through project financing (when needed), physical completion, and monitoring. One respondent stated that a concierge service "would be worth its weight in gold." Certain segments of building owners may have difficulty complying with BEPS without this level of support, for example affordable housing properties, non-profits, and other under-resourced owners.

A concierge service would provide a building owner/operator with a personalized advisory service designed to streamline what can be a challenging process of making energy efficiency improvements, improving building operations and maintenance, and complying with BEPS. This is an ambitious and more expensive undertaking than providing information and resources on a website, and so should be phased into operation after the HUB is initially established with an effective web-based platform of information and resources, and as budget permits.

What would a concierge service look like? Elevate Energy and Retrofit Accelerator offer examples: https://citizensutilityboard.org/wp-content/uploads/2017/01/ElevatePrograms.pdf and https://retrofitaccelerator.cityofnewyork.us/about-us. Elevate Energy in particular has targeted affordable housing. Listed below are key potential elements of a concierge service:

- Review with owners/operators their benchmarking results and/or energy audit reports; help them understand the results
- Provide utility bill analysis to analyze energy use regressed against temperature and help owners/operators understand results (analytic tool may be made available by Energy Resources Group or other organization)
- Help owner/operators use "rules of thumb" guidelines developed by the HUB to understand measures and technology options, potential savings and cost (not a substitute for complete professional analysis)
- Help owner/operators perform a Return on Investment (ROI)/Net Present Value (NPV) analysis, when appropriate/needed
- Clarify next steps in retrofit process and help prioritize measures/technologies
- Match an owner's needs with resources, tools, and skilled professionals
- Guide owner in selecting reputable contractors and service providers
- Provide information and assistance about accessing available incentives
- Provide information, assistance and referrals to financing options when needed
- Help track retrofit progress and trouble-shoot issues through project completion
- Educate about commissioning; connect with professional resources as needed
- Build awareness around importance of O&M; connect building staff to O&M training and information resources as needed

- Teach simple measurement and verification techniques to confirm energy savings

The HUB should prioritize financially disadvantaged and underserved buildings for concierge services, starting within the City of St. Louis. We recommend limiting this service to underserved owners/operators and disadvantaged communities, for two main reasons. There are more buildings over 50,000 square feet (1,075 buildings in the City of St. Louis and 1,964 buildings in St. Louis County) than the concierge service could hope to serve, and not all of these buildings need this high-touch level of help from a non-profit. Further, the HUB should seek to *build the market* for professional services supporting retrofits. The HUB should not directly compete with such professionals, but rather focus on those market segments that professional for-profit vendors may not effectively reach (underserved sectors), unless clear market failures persist (i.e., no professional service providers or vendors can be attracted to the market – a circumstance we don't anticipate).

Our recommendation is that the HUB subcontract with an appropriate entity to provide this concierge service, and not try to develop it from scratch.

Concierge services could be designed as a break-even undertaking for the HUB, although some under-resourced owners may not be in a position to pay anything. It is important to charge some fee for concierge services (even if nominal), so that recipients value the service and take it seriously. Fees can be tiered for different levels of service. For example, the HUB may offer under-resourced owners a needs assessment for [$50 -$150] that includes reviewing benchmarking, utility bill analysis, some initial measure prioritization ideas, advice on next steps to move forward, and basic information on incentives and financing like Ameren Missouri's BizSaver program. More services, like an audit or assessment, helping to apply for financing or incentives, tracking actual project construction and supporting measurement and verification (M&V) would carry additional fees. Waiving fees in true hardship cases should be considered.

Undoubtedly, there are owners and operators who would benefit from concierge-type services to advance investments in energy efficiency that are not underserved owners. In these cases, the HUB should be able to refer such owners to local professionals who can assist them, namely owners' representatives and other audit and design professionals, found in the HUB's directories of service providers. In this way, the HUB will avoid competing with local professionals, and can instead partner with these professionals to refer interested owners and operators and to help build a market for their services.

In surveys done by existing hubs and other existing energy efficiency programs, cost is frequently and consistently cited as a top barrier for owners, with access to funding and financing opportunities listed as an unmet need. Figuring out where the money will come from and how to take advantage of incentives and low-cost financing can be daunting for time-pressed or under-resourced owners. Financial returns associated with energy efficiency and renewable energy investments are often poorly understood or over-simplified. The HUB can do much to promote better understanding of the opportunities associated with energy retrofits – savings on future energy bills, returns on capital invested, co-benefits for residents and tenants like health and comfort, and resiliency. The responses from the survey and interviewing process confirm that

offering financing information and resources is viewed by many stakeholders as valuable programming that the HUB should offer.

The HUB can advance this goal by providing access to financing information and resources, promoting incentives and funding opportunities such as Ameren Missouri's BizSaver and Spire's rebate programs and other offerings, and facilitating connections to lenders, Property Assessed Clean Energy (PACE) originators and other entities with financing capabilities such as Energy Service Companies (ESCOs) and energy services agreement (ESA) providers. The HUB should also consider building the capacity to provide one-on-one advice to owners and operators on funding and financing options and solutions, as an enhancement to the concierge service discussed above. The HUB can seek to develop partnerships with lenders, and seek to obtain commitments to offer targeted efficiency lending products such as pre-development loans or green mortgages from Community Development Finance Institutions (CDFIs), community development groups within commercial banks, credit unions, and other lending institutions who can fill gaps in the financing markets for energy efficiency in St. Louis.

The hubs researched in the market analysis are generally not engaged in a significant way in workforce development activities. Our stakeholder engagement process led us to recommend that the HUB not invest in developing training resources because adequate training resources already exist in the St. Louis region. Rather, the HUB should serve as a central point of information for training resources and education programs offered by other organizations in St. Louis.

However, we recommend that, once the HUB has established its initial programming (especially the proposed concierge service), the HUB should engage with local workforce training programs. The HUB can play a role in connecting workers who have participated in, or have obtained certifications through, such training programs with energy efficiency projects advanced through the HUB's services and with contractors who are collaborating with the HUB. These activities can be part of the "spider web" that the HUB develops. The HUB will also be well-positioned to communicate with training programs and workforce development advocates about what skills, types of jobs and levels of training are necessitated by local projects that the HUB is helping to advance.

The marketing of the HUB should start with the mapping of the HUBs initial audience, then the HUB should develop a brand, followed by an official launch which will include a fully functional website, social media campaign and press strategy, which should be followed by building and expanding its network. The HUB should work to brand itself as a neutral, trusted, and knowledgeable resource and partner. Key stakeholder interviews stated a concern that the HUB should not be perceived as benefiting a particular company or industry, nor being the enforcer of any law or regulation. With the development of a hub in Kansas City, it is advised that the entities go by similar names, such as Mo BE-Ex KC and Mo BE-Ex STL. This would allow for a single website of MoBE-Ex.org, with a landing site allowing clients going to KC or STL and allowing each entity to share resources seamlessly.

Undertaking three categories of programming is an ambitious scope of work, particularly for a new organization and given the exciting and diverse list of potential resources and services entailed. Thus, we are recommending a phased approach to develop and deliver this programming.

Fortunately, the St. Louis HUB can avail itself of a body of work developed by other organizations, and it will have access to in-kind services provided by experienced organizations through the Leon Lowenstein Foundation grant awarded to the Institute for Market Transformation (IMT).

A review of existing hubs demonstrates that incubating the HUB within an existing organization will allow gradual administrative growth while also allowing a more rapid growth in programming. Thus, it is recommended the HUB incubate in a local organization. While not all interviewees agreed, the most frequently suggested incubating organization was the USGBC-Missouri Gateway Chapter. This incubation strategy will be closely correlated with the financial stability achieved by the organization. The following analysis suggests that -- programmatically and potentially financially-- by year 5 the HUB may be ready to establish itself legally and administratively as a standalone entity.

	Phase 1	**Phase 2**	**Phase 3**
Info and Resources			
Concierge Service			
Financing Assistance			

	Significant emphasis and budget allocation
	Secondary emphasis and budget allocation
	Limited/initial emphasis and budget allocation

Phase 1 refers to launch (at hire of ED) up to 12 months

Phase 2 refers to month 12 through end of year 3

Phase 3 refers to year 4 and beyond

As the HUB will be incubated within another organization initially, its governance should be controlled by a dedicated and separate board. This board, an advisory board while the HUB is incubated[5], should have a dedicated board seat for the sponsoring organization with the remaining seats for key stakeholders including Spire, Ameren Missouri and Washington University in St. Louis (WUSTL). The structure of the advisory board will allow for a seamless transition to a standalone organization in the future.

[5] Ultimately a Board of Directors if and when the HUB spins off as a separate and independent non-profit.

Revenue for the HUB must be diverse to ensure success. The ideal revenue from the HUB will include seed funding from the City of St. Louis, the County of St. Louis, Ameren Missouri, WUSTL and Spire. While it is unlikely that the city or the county will provide funding, all other hubs have received local government support and it is advisable to at least make the inquiry. Secondly, the HUB will require fundraising from local partners such as connected corporations, trade groups, contractors and even individuals. This fundraising can be both in-kind and through direct monetary donations. Finally, the HUB will be best served by collaborating with other partners and the Kansas City BE-Ex to apply for grants from governmental entities and foundations. With the launch of the Kansas City Hub, it is advised that a shared name be created (like Mo BE-Ex, for the Missouri Building Energy Exchange) and that these two hubs develop a single website.

Developing a program of in-kind services from local contractors/consultants will expedite the HUBs ability to deliver concierge service and financing assistance offerings. The funding for the concierge program can be from both general and targeted funding. A funding option that should be sought is to connect Ameren Missouri's and Spire's energy efficiency programs with the concierge program. It may be possible to garner financial support from the utilities to pay for assessments and audits delivered by the HUB, where a completed audit resulted in project implementation. It is possible that a revolving loan fund could be developed, where the HUB reports to the utility the number of audits done and the number of audits that resulted in completed projects and the utility refunds the HUB for those audits. Such funds would be separate and different from the sponsorships of Ameren Missouri and Spire.