ARCNet: Autonomous Resource Controller Network
Business Plan and Roadmap (2025–2028)

Executive Summary

The Autonomous Resource Controller Network or "ARCNet" (a subsidiary of Arc Public Benefit Corp) is launching the world's first global open-architecture, model-agnostic AI compute network – a network of 10 hyperscale "AI Factory" data centers (100 MW each) across the U.S., built in joint venture with NVIDIA. This platform will empower anyone to build and run large language models (LLMs) and other AI workloads at 10× lower cost per token than today's closed AI labs. Key features include usage-based pricing with no artificial usage caps, an open enablement platform for developers, and a sustainable energy strategy (mixing solar, battery storage, and small modular reactors) to ensure low, stable operating costs. The plan leverages NVIDIA's cutting-edge 800 V DC data center architecture and new Rubin CPX class AI chips to achieve unprecedented efficiency and scale. The venture will be independently owned and operated by ARCNet (Arc PBC), with NVIDIA as an anchor investor providing technology and capital support. By 2028, all 10 U.S. AI factories will be fully operational, forming a robust nationwide network ready for global expansion. Below is a comprehensive business plan and phased roadmap detailing how to achieve this vision by 2028.

Company Overview & Vision

ARCNet is a wholly owned subsidiary of Arc Public Benefit Corp., formed to democratize access to advanced AI computation. Mission: to build a public-benefit AI infrastructure that breaks current barriers of cost and access. We envision AI computation as a utility – open to all innovators without prohibitive costs or restrictions. ARCNet's independent ownership (outside Big Tech) and public-benefit mandate mean we prioritize accessibility and affordability over maximizing profit. This allows ARCNet to price services with modest margins, passing efficiency gains to users and fulfilling the goal of 10× lower cost-per-token for AI model training and inference compared to closed-source providers.

Key partnership: ARCNet has a joint venture with NVIDIA, which is both an anchor investor and technology partner. NVIDIA's backing ensures early access to the latest AI hardware and reference designs, de-risking the project. Importantly, ARCNet retains independent control (Arc PBC owns 100% of ARCNet), preserving the open-model mission while benefiting from NVIDIA's industry-leading tech. NVIDIA's CEO Jensen Huang has described next-generation AI data centers as "AI factories" – ARCNet will instantiate this vision as an open AI factory network. Together with NVIDIA, ARCNet will set a new standard for open AI compute, analogous to how open-source software disrupted proprietary software.

Value Proposition: ARCNet provides an open enablement platform where developers, startups, enterprises, and researchers can build, train, and deploy their own LLMs or AI models without needing to invest in hardware. Unlike closed AI labs or cloud providers that restrict models or impose usage limits, ARCNet's platform is model-agnostic and usage-based – customers pay only for the compute they use, with no hard limits or waitlists. This empowers a wide range of use cases, from a student fine-tuning an open-source model to a

large enterprise running million-token context AI applications. By dramatically lowering cost and entry barriers, ARCNet aims to foster a vibrant ecosystem of AI innovation for "everyday use" cases that are currently uneconomical under high-cost incumbents.

Market Opportunity and Demand

Demand for AI computing is skyrocketing. Generative AI and LLM adoption have triggered an exponential need for data center capacity. In the U.S., data center energy consumption is forecasted to double or even triple in the next decade. By 2030, an additional 150–250 TWh of electricity will be needed just for data centers, roughly equivalent to adding another New York City's worth of power consumption. This astounding growth is driven by AI workloads that consume far more compute and power than traditional web or cloud applications.

However, today's AI compute market is dominated by a few closed-source AI labs and hyperscale cloud providers. They operate proprietary model services (e.g. large hosted LLM APIs) at high cost – for example, leading API providers charge on the order of dozens of dollars per million tokens of output. Many organizations find current costs prohibitively high for large-scale or real-time AI applications. The cost per token for state-of-the-art models remains a limiting factor for broader AI adoption. Additionally, closed platforms impose usage quotas, strict content policies, or require surrendering control of models, which stifles innovation for independent developers.

This gap in the market presents a huge opportunity for an open, low-cost alternative. Countless startups, research labs, and enterprises want to train or deploy custom LLMs (for domain-specific assistants, code generation, creative content, etc.) but lack affordable access to the necessary computing infrastructure. By providing compute-as-a-service at 10× lower cost than incumbent offerings, ARCNet stands to capture this unmet demand. The addressable market includes not only direct users of AI models but also cloud providers and enterprises looking to offload or augment their AI workloads economically. With data center financings topping $60 billion in 2025 (double the previous year) , investors are actively funding infrastructure growth – yet much of it serves the same few hyperscalers. ARCNet's model opens this infrastructure to wider user segments, potentially expanding the overall AI services market by enabling new applications that are not viable at today's cost structure.

In summary, surging AI demand and the shortcomings of closed providers create a perfect storm for ARCNet. Our network will turn AI computing into a commodity utility – abundant, inexpensive, and openly accessible – fueling the next wave of AI-driven innovation.

Solution: Open-Architecture AI Compute Network

ARCNet's solution is to build a distributed network of 10 ultra-scale AI data centers (100 MW each) by 2028, initially across the United States. These "AI factories" will be unified under one platform, operating as a single network that developers can tap into on-demand. The core elements of our solution include:

- Open Architecture & Model Agnosticism: Each AI factory provides standard compute building blocks (NVIDIA GPU-based) accessible via open frameworks. Users can run any model or AI framework of

their choice (PyTorch, TensorFlow, JAX, etc.) – no proprietary model lock-in. This platform will support both training of new models and inference serving for deployed models. By being model-agnostic, we enable use of open-source models and custom architectures, unlike closed labs that only offer their chosen model. A rich set of APIs and tools will be provided so that even small teams can easily deploy large models or training jobs on thousands of GPUs, as easily as renting cloud instances.

- "AI Factory" Data Centers: The network's backbone is 10 identical 100 MW data centers strategically located in the U.S. These facilities – built in phases from 2026 to 2028 – are designed specifically for AI workloads (high-density, high-power draw, low latency internal networks). Each site will house on the order of hundreds of petaflops to exaflops of compute capacity. For example, NVIDIA's new Vera Rubin NVL144 rack platform can deliver 8 exaflops of AI performance and 100 TB of fast memory in a single rack. At full scale, each 100 MW AI factory could contain ~100 of these 1 MW racks, meaning multi-exaflop capacity per site. Across the network, total capacity will be in the multi-zettaflop range, capable of supporting millions of AI inference requests or training multiple frontier models in parallel. This massive capacity, combined with efficient design, underpins our 10× cost advantage – NVIDIA projects that Rubin-class systems enable $5 billion in token revenue for every $100 million invested in hardware, far outpacing prior generations.

- Usage-Based Cloud Service (No Limits): ARCNet will offer the compute network as a cloud-like service where users pay per usage (e.g. per GPU-hour or per million tokens processed). No upfront hardware investment is needed by users. Unlike some AI API providers that impose rate limits or require special access for high volumes, ARCNet imposes no arbitrary usage limits – any user from an indie developer to a Fortune 500 company can scale up to thousands of GPUs or trillions of tokens as needed, subject only to available capacity and billing. This elastic, pay-as-you-go model makes our service equally appealing for one-off experiments and production-scale deployments. We will provide pricing transparently based on compute and energy costs, and thanks to our efficiency, we can sustain prices roughly 10× lower than current market rates per unit of compute. Our goal is to make running a large model as affordable (per token) as running a web app is today.

- Developer Enablement Platform: On top of the raw compute, ARCNet is building an enablement layer to simplify AI development. This includes a web portal and APIs to manage jobs, an orchestration system to allocate resources across the 10 sites optimally, and libraries/integration with popular ML frameworks so that migrating to ARCNet is seamless. We will also maintain a catalog of pre-optimized open models (e.g. various LLMs, vision models) that users can deploy with one click, or fine-tune with provided tooling. Essentially, we combine the performance of dedicated infrastructure with the usability of a cloud platform.

By combining these elements – open accessibility, massive scalable compute, and easy-to-use tooling – ARCNet's network becomes a general-purpose AI utility. Any organization or individual will be able to harness cutting-edge AI compute power on demand, unleashing innovation across industries (finance, healthcare, education, software, creative arts, etc.) that is currently bottled up by high costs or exclusive access. ARCNet aims to be to AI development what the internet once was to information – an open platform enabling countless new applications.

Technology and Infrastructure

A key differentiator for ARCNet is our use of next-generation data center technology co-developed with NVIDIA. We are adopting NVIDIA's latest reference architecture (circa 2025–2027) to ensure unmatched performance and efficiency in our AI factories:

- 800 V DC Power Architecture: Traditional data centers distribute power as AC (alternating current) and convert to lower voltages multiple times, wasting energy and limiting capacity. ARCNet's facilities will implement NVIDIA's new 800 V direct current (VDC) architecture end-to-end. In this model, utility power (13.8 kV AC) is rectified to 800 V DC at the facility level and fed directly to high-voltage busways and into the racks. This drastically reduces conversion losses and copper usage. In fact, moving from 480 VAC to 800 VDC allows over 150% more power to be delivered through the same copper cabling, eliminating the need for massive copper busbars and heavy transformers. The result is improved electrical efficiency (fewer heat losses) and the ability to support extreme rack power density (the architecture is designed to handle 1 MW+ per rack vs tens of kW in legacy setups). All 10 ARCNet sites will be built with this cutting-edge 800 VDC backbone, enabling us to pack more GPUs per rack and supply them efficiently – which translates to better performance per dollar for our customers.

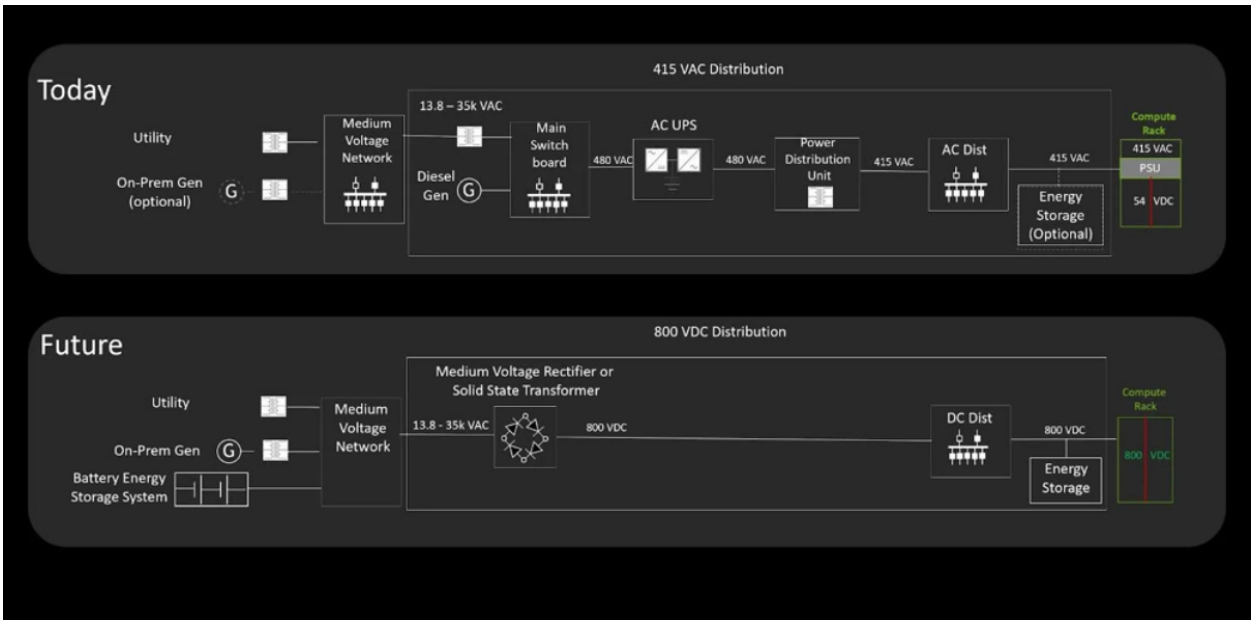

Figure: Comparison of traditional 415 V AC distribution (top) versus the new 800 V DC distribution (bottom) in data centers. The 800 V DC architecture eliminates multiple conversion stages and transmits ~150% more power over the same wires, greatly improving efficiency and reducing infrastructure bulk. Integrated energy storage in the DC system also helps buffer rapid load swings from AI workloads, improving grid stability.

- **Integrated Energy Storage & Power Stability:** AI training and inference workloads cause highly volatile power draw – thousands of GPUs can ramp from near idle to full draw in milliseconds in synchronized fashion. This can strain electrical systems. ARCNet will build in a multi-layer energy storage solution to buffer these swings. At the rack level, we will use ultracapacitors or supercapacitors

to absorb microsecond-to-second spikes locally. At the facility level, each site will include large battery energy storage systems (BESS) that can supply many MW for seconds to minutes. These act as a "shock absorber" between the data center and the grid, smoothing out rapid surges and dips. NVIDIA's reference design calls for on-site energy storage to be treated as an active component, not just backup – ARCNet embraces this. In fact, the new Vera Rubin rack design includes 20× more integrated energy storage than previous generations specifically to keep power steady during GPU surges. By deeply integrating battery/capacitor storage, we protect the grid and avoid over-designing power infrastructure for rare peaks. This reduces overall power costs and increases reliability (the batteries also provide ride-through power if grid supply momentarily flickers). Our energy storage also pairs with on-site renewables (solar) to time-shift energy to when GPUs need it most (e.g. evenings).

- **High-Density Compute Hardware:** Each ARCNet data center will deploy NVIDIA's latest "AI factory" hardware units. Specifically, we plan to utilize NVIDIA's Vera Rubin architecture (the generation succeeding the 2022 Hopper and 2024 Blackwell architectures). This includes the new Rubin GPU (for training and general-purpose AI compute) and the specialized Rubin CPX GPU (for massive-context inference acceleration). The Rubin CPX is a breakthrough: it is purpose-built for handling extremely long context inputs (million-token sequences) and high-throughput inference. It uses a cost-efficient monolithic chip design emphasizing tensor compute over memory bandwidth, with 128 GB of GDDR7 memory instead of expensive high-bandwidth memory. This design gives up to 30 PFLOPS of compute in FP4 precision on a single CPX chip, and features dedicated hardware for fast attention mechanisms, yielding 3× faster processing of long sequences compared to previous-gen systems. By incorporating Rubin CPX chips alongside standard Rubin GPUs, our racks can handle both training and inference extremely efficiently – heavy training tasks benefit from the high-memory, high-bandwidth Rubin GPUs, while large-scale inference and context-heavy tasks are offloaded to the cheaper, compute-dense CPX chips. NVIDIA's Rubin-based NVL144 CPX platform combines 72 high-end GPUs and 144 CPX accelerators in a rack, delivering 8 exaflops of AI performance per rack with 100 TB fast memory. This is 7.5× the performance of the prior-gen NVIDIA systems. By 2027, NVIDIA's roadmap (code-named Kyber) will enable racks with up to 576 Rubin Ultra GPUs interconnected as a single system, pushing the envelope of model training capability. ARCNet's close collaboration with NVIDIA ensures we will be among the first to receive and deploy these state-of-the-art AI systems. In short, our data centers will host the most advanced AI hardware on the planet, giving our users a competitive edge and maximizing compute per dollar.

- **Advanced Cooling and Reliability:** To support power densities approaching 1 MW per rack, we will implement advanced liquid cooling solutions. NVIDIA's reference design uses 45°C warm-water cooling for the Vera Rubin racks – we will leverage similar liquid cooling distribution units to keep GPUs at optimal temperatures without massive HVAC overhead. Warm-water liquid cooling, combined with the temperate site locations we plan (see site selection criteria below), will improve our Power Usage Effectiveness (PUE) and reduce cooling costs. Furthermore, by simplifying the power architecture (thanks to 800 V DC and fewer conversion components) and using modular MGX rack designs, we improve overall system reliability and serviceability. The design includes features like a central mid-plane (circuit board) replacing many cables for faster assembly and maintenance. All these engineering choices lead to higher uptime and lower operating expense, which again translates into cost savings for our users.

In summary, ARCNet's infrastructure is purpose-built for AI at scale. By adopting NVIDIA's latest 800 V DC + Rubin architecture and integrating energy storage and liquid cooling, we achieve unprecedented efficiency. This technical foundation is what enables us to target a 10× reduction in cost-per-token. Our customers effectively get the benefit of NVIDIA's cutting-edge R&D (ultra-fast chips, efficient power distribution) without having to build or manage any of it themselves – ARCNet provides it as a service.

Energy Strategy and Sustainability

Power availability and cost are the lifeblood of AI data centers. In a 100 MW facility, electricity is by far the largest operating cost, running into hundreds of millions of dollars per year for a single site. ARCNet's energy strategy is therefore crucial for both cost efficiency and reliable operations. We have crafted a hybrid power approach that ensures low-cost, stable, and sustainable energy for each AI factory through a combination of solar PV, battery storage, and small modular nuclear reactors (SMRs):

- **Site Selection for Optimal Energy:** Since we have not yet selected sites (as of 2025), we will strategically choose locations in the U.S. that offer cheap, abundant power and supportive infrastructure. We target areas with high solar irradiance (for solar farms) and supportive state policies for renewable energy and nuclear innovation. We also look for regions with shorter interconnection queues to the grid (to get power projects hooked up faster) and temperate climates (to reduce cooling needs) . Avoiding regions prone to natural disasters (floods, hurricanes, wildfires, earthquakes) is important to minimize downtime risk. Low land cost and receptive local communities are additional factors – for example, states in the Southwest or certain parts of the Southeast U.S. have ample land, sunshine, and often welcome large tech infrastructure for economic development. Each site will likely require ~100 acres or more if including on-site generation facilities. We will work closely with state/local governments to secure suitable sites, leveraging Arc PBC's mission to position these as public-benefit infrastructure.

- **Solar PV + Battery for Daytime Power:** Solar energy will play a major role in our power mix. For each data center, ARCNet plans to either build or procure from a dedicated solar farm (utility-scale photovoltaic installation). A 100 MW data center has a huge energy appetite (876 GWh/year at full load). While solar cannot supply 24/7 power alone, it can provide cheap electricity during daylight hours. We will sign long-term Power Purchase Agreements (PPAs) with solar developers for each site. These PPAs, typically 15–20 years in length, lock in a fixed low price per kWh and thereby provide price stability and a bankable revenue stream to finance the solar project. Indeed, PPAs of 10–20 years are standard to support financing the construction of new generation. By committing ARCNet as an off taker, we enable new renewable projects to be built (a public benefit) and secure low-cost power for ourselves in return. During sunny hours, the solar farms (potentially in the range of 200–300 MW of solar capacity per site to meet daytime load and charge batteries) will feed the data center (either directly via private wire or through the grid via a physical or virtual PPA arrangement). We anticipate achieving solar PPA prices in the range of $20–30/MWh given current trends, which is extremely economical. Excess solar generation midday will charge our on-site battery banks, which then discharge during evening peak compute times. This arrangement not only cuts energy cost but also ensures a carbon-free supply in line with sustainability goals.

- **Small Modular Reactors (SMRs) for Baseload:** For round-the-clock, reliable power, ARCNet will integrate advanced nuclear SMRs into the energy mix. SMRs are compact nuclear reactors (often 50–100 MW each) that can provide 24/7 carbon-free power with a steady output. While traditional large nuclear plants are costly and slow to build, SMRs promise faster deployment and modular scalability – several designs are targeting operation later this decade. We plan to partner with leading SMR developers (such as NuScale Power, which has the first U.S. NRC-certified SMR design) and possibly energy utilities to deploy SMRs adjacent to or near our data centers. For example, Standard Power, a data center company, has announced plans for two SMR-powered data center facilities in Ohio and Pennsylvania targeting operation by 2029, using NuScale's approved SMR technology. ARCNet will pursue a similar timeline, aiming to have the first SMR units supplying our facilities by ~2028–2030. We anticipate using one or two 77 MWe SMR modules per site to provide a steady ~77–154 MW baseload of clean power. With multiple sites, we could aggregate demand to justify one SMR serving two nearby data centers, if appropriate. We will secure PPAs or joint development agreements with SMR providers – these agreements will likewise be used for financing the reactor construction (just as with renewables, reactors need long-term off-take contracts for project finance). While SMRs have a longer lead time (permitting, regulatory approval, and construction), we are starting the process early (2025–2026) by engaging with SMR vendors and regulators. The benefit by 2028–2030 is firm, continuous power at a stable cost (nuclear fuel costs are low and fixed). SMRs complement solar by covering nighttime and cloudy-day power needs. They also enhance reliability – even if solar output or grid supply fluctuates, the nuclear source holds steady. Additionally, locating SMRs on-site cuts transmission losses and insulates us from grid outages or price spikes. By combining SMR baseload with solar+battery, each ARCNet AI factory can run on 100% carbon-free energy around the clock, a major sustainability milestone.

- **Grid and PPA Securitization:** In addition to dedicated sources, our sites will maintain grid connections as backup and for supplementary power if needed. However, our primary supply will come via the PPAs we establish. We will employ an energy-backed financing strategy: the long-term PPAs (for solar, and eventually for SMR output) will serve as collateral to secure project financing for both the power plants and our data center construction. Lenders and investors take confidence in the fixed price, long-duration energy contracts – just as in typical renewable project finance, where a stable PPA with a creditworthy buyer underpins the funding. In ARCNet's case, we essentially act like a utility off taker. We intend to leverage energy asset-backed securitization: for example, once our data centers are up and running with signed PPAs and generating cash flow, we can bundle those long-term cash flows (customer usage revenues and our fixed-price energy outlays) into asset-backed securities (ABS) or green bonds. The asset-backed securitization market for data centers has grown significantly in recent years. It allows operators to refinance operational assets by issuing bonds backed by stable contracts and leases. ARCNet will follow this model – after initial project finance during construction, we will refinance through ABS issuances when the facilities are stabilized. This yields lower cost of capital and frees up equity to reinvest in expansion. According to industry experts, ABS issuance for data centers in the U.S. is expected to grow to ~$25 billion by 2028, reflecting how popular and effective this financing tool has become. ARCNet's strong contracts (PPAs for energy and, on the revenue side, multi-year commitments from anchor users or partners) will make for high-grade securitization deals. Ultimately, this approach lets us scale faster by recycling capital from one project to fund the next, while our energy PPAs ensure predictable low operating costs for decades.

In summary, ARCNet's energy strategy is to lock in low-cost, clean power at scale and use innovative financing to fund growth. Solar PPAs give us cheap daytime power and financing leverage; SMRs give us reliable baseload; batteries and 800 V DC integration give us stability and efficiency. This trifecta – solar, batteries, SMR – makes our energy supply secure, green, and affordable, directly enabling the 10× cost reduction target. It also turns our energy sourcing into a long-term strength: while others may face rising grid prices or carbon pressures, ARCNet will enjoy stable costs and clean energy well into the 2030s.

Business Model and Revenue

ARCNet's business model is straightforward: we provide AI computing capacity as a service, charging users based on their consumption. Key aspects of our model include:

- **Usage-Based Pricing:** Customers pay per unit of compute used – whether that is measured in GPU-hours, FLOPs, or tokens processed, depending on the service. For example, training jobs might be billed per GPU-hour, while inference API usage might be billed per million tokens generated. This granular, on-demand pricing means clients only pay for what they actually use, with no minimums or long-term contracts required (though we will offer volume discounts or reserved capacity deals for large commitments). By eliminating upfront costs and offering elastic scaling, we dramatically lower the barrier to entry. A developer can spend a few dollars to run a prototype on our cluster, or a company can scale up to a million-dollar training run – all with the same platform. Our pricing will be transparent and published, similar to cloud provider pricing pages, so users can estimate costs easily. Thanks to our low operating cost structure, we can price very competitively – e.g. if a competitor charges $0.12 per 1,000 tokens output on a GPT-4 level model (roughly $120 per million tokens), ARCNet could target ~$0.01–0.02 per 1,000 tokens for equivalent compute power, an order of magnitude cheaper.

- **Service Offerings:** ARCNet will have multiple service tiers to cater to different needs:

    - **Base Compute:** Raw compute instances (virtual or containerized environments) where customers can run any AI workload. This is analogous to cloud VM instances or Kubernetes pods but backed by our GPU clusters. Users get flexible compute environments (with pre-installed AI frameworks) to train or serve models. Billed by the second or hour of GPU usage.

    - **Managed AI APIs:** For customers who don't want to manage infrastructure at all, we will offer managed services – e.g. an API endpoint for a deployed model (could be the user's custom model or an open-source foundation model we host). We ensure availability and scaling of the endpoint, and charge per million tokens processed or per inference call. This competes with products like OpenAI's API, but with the advantage that customers can deploy their own models and have full transparency/control.

    - **Data Services & Storage:** Collateral services like large-scale data storage and processing for training data, or integration with data pipelines. While compute is the main focus, providing convenient data management (possibly in partnership with existing cloud storage providers) can be a value-add and modest revenue source.

- **Professional Services:** While the platform is self-serve, some enterprises may need help optimizing models or designing training runs. ARCNet can offer consulting, engineering support, or co-development for an additional fee. This also strengthens customer relationships and ensures big clients succeed (driving more usage).

- **Marketplace:** Over time, ARCNet could facilitate a marketplace of AI models and assets (for example, third parties can offer pre-trained models or fine-tuning datasets on our platform, and we could take a small commission). This aligns with our open ethos – enabling model sharing – and can organically drive more compute usage.

- **No Usage Limits & Fair Access:** A major differentiator is our no cap approach. Many current AI services restrict usage (either for cost control or due to limited capacity). ARCNet's philosophy is that if a customer is willing to pay for the usage, they should be able to use as much compute as they need. Our 10-site distributed network provides a massive capacity buffer, and we will implement smart scheduling to accommodate even very large one-time jobs alongside steady users. We will not impose arbitrary rate limits or require special approval for high volumes. This policy will attract power users (e.g. AI research groups that might generate trillions of tokens for a project, or video generation companies requiring sustained GPU access) who have been hamstrung by others' limits. Our only caveat will be technical fairness – resources are finite, so if demand temporarily exceeds supply, we will queue or throttle jobs based on priority tiers (e.g. subscribers with reserved capacity get precedence, others are first-come-first-served). But the overall capacity we're building should keep such contention rare in normal operations.

- **Target Customers & Go-to-Market:** Initially, we will target AI model developers (startups, research institutions, and corporate R&D teams building advanced models). These users feel the pain of expensive compute the most. We have early interest from AI innovators – for instance, companies like Cursor (AI code assistant), Runway (generative video), etc., are exploring how specialized hardware like Rubin CPX can accelerate their apps. Such companies are natural early adopters of ARCNet's platform, as it directly addresses their scaling challenges. We will also approach cloud-native AI startups (the "openAI alternatives") that would prefer an open infrastructure partner over tying themselves to a major cloud. As we establish credibility, we anticipate onboarding larger enterprise clients (e.g. banks running AI for risk, hospitals doing medical AI – who want dedicated infrastructure with data privacy but don't want to build it themselves). Our sales strategy will be a mix of direct sales for big users and self-service sign-up for smaller users (with a robust online onboarding process). We will also form partnerships with AI software providers and open-source communities – for example, collaborating with Hugging Face or universities so that their models or tools run seamlessly on ARCNet. Being model-agnostic and community-friendly will allow us to integrate into the existing AI ecosystem rather than compete on models.

- **Revenue and Scaling:** ARCNet's revenue will scale with usage. Given the explosive demand for AI compute, we expect high utilization of our capacity once it comes online. NVIDIA's analysis suggests an enormous revenue potential for those who deploy this new class of hardware – up to $5 billion in annual token-generation revenue per $100 million hardware investment at full utilization. For ARCNet, each 100 MW (roughly $300–500 M in capital assets) data center could thus yield on the order of $15–25 B in token revenues over its life if run at high load. Of course, initial utilization will ramp up over

time, but even at moderate utilization, revenues are significant. We will also employ cost-plus pricing – thanks to our low energy and overhead costs, we can maintain healthy margins while still undercutting competitors' prices substantially. As a public benefit corp, we are content with moderate profit margins; excess profit can be reinvested in further lowering prices or expanding capacity. This stance should help us gain market share quickly through price leadership and positive word-of-mouth among the AI developer community.

- **Competitive Position:** Our primary competitors are the incumbent cloud AI services (OpenAI/Microsoft, Google Cloud, AWS, etc.) and possibly emerging GPU cloud companies. We differentiate on openness (bring your own model), cost (10× cheaper), and neutrality/independence (we are not going to use customer data to train our own models or compete with them; our interest is purely in enabling customers' success). Over time, network effects could emerge – e.g. if many cutting-edge AI projects run on ARCNet, it becomes the platform where new AI breakthroughs happen, attracting even more users. We will continually invest in the latest hardware and expand the network globally (post-2028) to maintain a tech advantage. Our usage-based model should also create a stable revenue base with diversification (no single customer > X% of usage), making us resilient. The joint venture with NVIDIA also likely dissuades certain competitive pressures – NVIDIA benefits from our success (via GPU sales and equity stake), aligning their interests with ours rather than with our competition.

In summary, ARCNet will make money by selling AI computing by the slice, cheaper and more flexibly than anyone else. We will grow revenue by filling our massive capacity with global AI workloads, leveraging our cost advantage to capture demand. With prudent cost control and our financing strategy, even at the reduced prices we can generate substantial returns (especially given the ~50× revenue-per-hardware-dollar potential cited by NVIDIA). And by focusing on the needs of the AI builder community, we aim to become the go-to infrastructure for the next generation of AI applications.

Roadmap to 2028: Deployment Phases

Achieving a fully operational 10-site network by 2028 is an ambitious goal. We have structured a clear roadmap with phased milestones to ensure we stay on track. Below is the timeline and key activities from 2025 through 2028:

1. **2025 – Planning and Capitalization:** ARCNet kicks off in late 2025 with the NVIDIA joint venture in place. Key actions: Establish the core leadership and engineering team for ARCNet. Secure initial seed funding – NVIDIA's anchor investment (both capital and in-kind hardware R&D contributions) is a cornerstone, and we will raise additional equity/debt in a Series A to fund early development. Immediately, we engage in site selection studies for the first data center locations. By mid-2025, we will narrow down to a short-list of states (candidates include Arizona, Texas, New Mexico for solar potential; or Tennessee, Ohio for nuclear-friendly climate, etc.). We will initiate discussions with state economic development agencies to identify suitable land with available grid interconnections. No PPAs are signed yet in 2025, but we open negotiations with renewable energy developers and SMR providers (like NuScale, TerraPower) to outline our future needs. We also begin the design and engineering work for the prototype facility – working with NVIDIA's engineers on the 800 V DC power design and Rubin-based rack layouts. By the end of 2025, we aim to have: a) at least 3 sites identified with letters

of intent for land/power, b) a technical reference design for the data centers (blueprints that can be scaled to each site), and c) initial regulatory/environmental assessments started for those sites (e.g. checking zoning, grid capacity, permitting requirements). Additionally, we'll place pre-orders for critical equipment with NVIDIA – given global demand, we'll reserve our allocation of GPUs and power components for 2026–2027 delivery. (NVIDIA's support here gives us priority access to the latest chips.)

2. **2026 – Site Acquisition and Construction Begin:** In 2026, the project moves from planning to execution. Milestones: Early in 2026, we will finalize acquisition or leasing of land for the first 3–5 data center sites. We plan a staggered approach: break ground on the first site by mid-2026, with second and third sites a few months behind. Each site will have its own project company for financing purposes. By Q2 2026, we aim to sign the first Power Purchase Agreements (PPAs) for renewable energy. For example, if Site #1 is in Arizona, we may sign a 200 MW solar PPA with a solar developer (with COD – commercial operation date – by 2027). These initial PPAs will be used to secure construction financing: we'll work with banks/investors to arrange project finance loans, where the PPA's guaranteed revenue to the solar project and the data center's future colocation revenues serve as collateral. NVIDIA's involvement and possibly an anchor tenant contract (NVIDIA itself or a large cloud user committing to use some capacity) will bolster lender confidence. We will also pursue government loan guarantees or incentives (e.g. DOE loan programs for innovative energy infrastructure, tax credits for solar/storage and SMRs, local tax abatements for data centers, etc.). By mid/late 2026, full-scale construction begins on the first AI factory: this includes pouring foundations, building the shell, bringing in power infrastructure (substation, transmission lines for grid tie-in), and setting up network fiber connectivity. We'll also build the on-site energy elements like battery storage and interconnections for future solar/nuclear supply. Internally, by late 2026 the software platform development (cloud portal, orchestration system) will be in beta, so that it's ready when hardware comes online. Key KPI by end of 2026: Phase-1 data centers (~3 sites) are >50% constructed, and at least 50% of necessary capital for all 10 sites is secured or identified.

3. **2027 – First Data Centers Online (Beta Launch):** The year 2027 is critical as we begin operations. Q1–Q2 2027: The first data center (likely our flagship site) reaches completion of construction. We install and commission racks of NVIDIA hardware – by this time, NVIDIA's Rubin GPU and Rubin CPX systems are becoming available (the roadmap expects availability starting in 2027 for 800 VDC-based rack systems). We will integrate these into our facility, testing the 800 V power distribution, liquid cooling, and software stack. Expect an initial capacity of perhaps ~20 MW at site #1 coming online for beta testing (we won't populate all racks immediately; we'll scale up module by module). We also install and test our energy storage systems and ensure the solar PPA power is flowing (initial solar farms might come online in stages during 2027 as well). Mid-2027: ARCNet launches a private beta – inviting a select group of partner users (some of the AI startups and research labs we engaged earlier) to run workloads on our first operational cluster. This allows us to shake out software bugs, ensure our scheduling and billing systems work, and demonstrate real-world cost per token. By this time, additional sites #2, #3, #4 are finishing construction and beginning to install equipment in a staggered fashion. We also anticipate signing more PPAs in 2027 for the later sites – including possibly contracts for SMR power. Many advanced nuclear projects firm up by 2027; for example, if NuScale's timeline holds, they may begin construction of SMRs for Standard Power around 2027–2028. ARCNet will aim to ink an agreement such that an SMR unit is allocated for one of our sites around 2028. Financing-

wise, by late 2027, once our first sites have customer contracts and revenue, we can explore refinancing the construction loans via the asset-backed securitization market (for instance, package the first 3 operational centers into a master trust and issue ABS notes). This will lower interest costs and fund the final wave of construction. Q3–Q4 2027: We plan a public launch of ARCNet's platform, once we have at least two sites running (for redundancy and geographic coverage). Marketing and sales efforts ramp up – showcasing case studies from beta users and the cost savings achieved. We target that by the end of 2027, 5 out of 10 data centers are completed and online (with varying levels of load as customers ramp up), and the remaining 5 are under construction or in pipeline. The network begins to function as a cohesive unit, balancing loads and providing multi-region failover. At this stage, we should have demonstrated the viability of 800 V DC architecture at scale and likely will attract industry attention as a model for future AI infrastructure.

4. **2028 – Full Network Deployment and Scale-Up:** In 2028, ARCNet reaches maturity in its initial phase. Early 2028: The remaining data centers (#6 through #10) come online sequentially. By mid-2028, all ten 100 MW facilities are fully operational, marking the completion of our U.S. network. We will hold a milestone event inaugurating the "global open AI network," likely inviting press and key stakeholders to our flagship site, demonstrating an AI application running seamlessly across multiple sites. With full capacity available (~1,000 MW of AI compute in total), our focus shifts to filling that capacity with customers. We project accelerating customer acquisition through 2028 as word spreads and our early users publicly share their successes (e.g., startups achieving feats on ARCNet that were impossible elsewhere). With an open platform, usage may also grow virally – e.g., academics can run large experiments and publish results, driving more researchers to use the platform. Financial events: In 2028, with a strong operational record, ARCNet could consider an IPO or additional equity raise (particularly if further global expansion is planned). However, given we are a PBC, we may also consider alternative funding like impact investment or sovereign wealth partnerships if aligned with our mission. On the technology front, 2028 will likely see us integrating next-gen NVIDIA upgrades (NVIDIA's roadmap beyond Rubin – possibly Blackwell+ or new interconnects). We will continuously refresh part of our hardware to stay ahead on efficiency. Energy milestones in 2028: If our partnered SMRs stay on track, some may begin commissioning late 2028 or 2029. We will likely finalize arrangements for SMR power delivery to certain sites by end of 2028. In the interim, our sites run on the combination of grid + solar/battery contracts. By end of 2028, each site should have a balanced power portfolio locked in (e.g., 50% solar, 50% grid/nuclear). We will also complete any asset securitization transactions – essentially turning the successful cash flows of our now-operational data centers into long-term bonds, which pays off construction debts and solidifies our financial base . Customer base: We target having a broad mix of customers by 2028 – hundreds of small developers, dozens of mid-size companies, and a handful of big enterprise deals. The usage-based model means even small revenue from many users adds up. If each of our 10 sites achieves even 50% utilization by end of 2028, we will be a profitable, cash-flow positive operation by this time (given our low energy costs locked in by PPAs). In late 2028, we will begin planning Phase 2 expansion – which could mean adding more capacity at existing sites (each site can often scale beyond 100 MW if land permits) and/or extending to international locations (Europe, Asia) to truly make it a global network. We expect to leverage our 2025–28 success to secure international partners for expansions starting in 2029.

5. **Post-2028 Outlook:** By meeting the 2028 goal, ARCNet establishes itself as the premier open AI compute network. Beyond 2028, the focus will be on global expansion and continual innovation. We

anticipate exporting our model to Europe and Asia-Pacific, either by building new AI factories or partnering with local data center operators (Arc PBC might form joint ventures abroad, potentially with government support if aligned with digital infrastructure goals). Technologically, we will embrace new developments such as optical networking between sites (to create a globally distributed supercomputer), ever more specialized AI chips (if NVIDIA or others launch new classes beyond Rubin CPX, we'll evaluate and integrate), and perhaps quantum accelerators if relevant. Our mission remains to stay 10× cost-advantaged over any competition – meaning if overall AI compute costs drop, we aim to drop ours further via innovation and efficiency. By 2030, with help from SMR power and possibly even fusion on the horizon, ARCNet could approach near-zero marginal energy costs, which we would pass on to users. Ultimately, ARCNet's success by 2028 will influence the AI industry's trajectory: we expect closed-source providers will react (possibly cutting prices or opening up models), but with our head start and principled mission, we plan to remain the leader in affordable, open AI infrastructure.

Conclusion

ARCNet's plan to build a fully operational 10×100 MW AI compute network by 2028 is bold but achievable. We have a robust strategy spanning cutting-edge technology, clever financing, sustainable energy, and a compelling open-access business model. By leveraging NVIDIA's newest 800 V DC architecture and Rubin class chips, we gain an efficiency edge that translates directly into lower costs for our users. By investing in solar farms and next-gen nuclear, we control our largest cost driver (power) and ensure reliable supply. And by structuring as a public-benefit, open platform, we tap into a vast pent-up demand from organizations who want more control and affordability in AI development.

By 2028, ARCNet will have transformed the economics of AI: tasks that were once too expensive (like training billion-parameter models on personal data or running AI assistants continuously for every person) will become feasible. Our 10 AI factories will act as hubs of innovation, potentially spawning breakthroughs as more minds gain access to large-scale compute. Importantly, our success will have a societal benefit – narrowing the gap between AI haves and have-nots and ensuring that the power of AI is not locked in the hands of a few companies. At 10× lower cost-per-token, we envision a world where AI is ubiquitous in daily life, powering education, healthcare, business, and beyond, much like electricity or the internet does – and ARCNet will be the backbone enabling that ubiquity.

We will measure our success not just in financial returns but in the ecosystem, we cultivate: thousands of customers, an open library of user-contributed models, and AI applications that were unimaginable before. The journey from 2025 to 2028 will require meticulous execution and adaptability, but the roadmap is in place. With NVIDIA and our other partners at our side, and a clear focus on our mission, ARCNet is set to usher in a new era of open, affordable AI computing. Together, we will turn this ambitious vision into reality and light up the world's first global model-agnostic AI compute network by 2028.