

Energy Waqf as Islamic Fiscal Innovation: Theoretical Framework and Conceptual Development

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Abstract

This study develops a comprehensive theoretical framework for energy waqf as a Shariah-compliant fiscal instrument addressing energy poverty and sustainable development challenges. We synthesize Maqasid al-Shariah principles with contemporary development finance theory to integrate traditional waqf mechanisms with modern energy access strategies. Our contribution is threefold: First, we establish theoretical foundations positioning energy waqf within Islamic fiscal theory. Second, we develop a conceptual framework bridging classical fiqh with development finance architecture. Third, we propose a taxonomy of fiscal waqf instruments for energy poverty alleviation. Through systematic literature review and Maqasid-based analysis, the framework addresses critical theoretical tensions. These include perpetuity requirements versus technological obsolescence, charitable mandates versus fiscal sustainability, and Shariah compliance versus commercial viability. This research provides actionable guidance for policymakers and waqf institutions seeking Shariah-compliant pathways toward universal energy access.

Keywords: energy waqf; islamic fiscal policy; maqasid syariah; sustainable finance; energy poverty; fiscal innovation

INTRODUCTION

The intersection of Islamic fiscal theory and sustainable development represents an underexplored frontier in contemporary Islamic economics scholarship. Classical Islamic fiscal instruments have been extensively documented (Kahf, 1999; Cizakca, 1998). However, their application to modern development challenges remains theoretically underdeveloped. This gap is particularly evident in energy poverty, where Islamic fiscal mechanisms have yet to be systematically theorized. Energy access is fundamental to *Maqasid al-Shariah*. It constitutes an integral component of preserving life (*hifdz an-nafs*) and wealth (*hifdz al-mal*), as articulated by classical and contemporary scholars (Ibn Khaldun, 1958; Laldin & Furqani, 2013). Yet this theoretical grounding has not translated into effective interventions. Energy poverty persists across Muslim-majority nations in the Organisation of Islamic Cooperation (OIC) countries (Ismal, 2022). This disparity reflects critical implementation gaps in Islamic socio-economic justice (*al-adalah al-ijtima'iyah*). It raises urgent questions about mobilizing Islamic fiscal instruments for sustainable development. There is a clear need for innovative frameworks that bridge classical jurisprudence with contemporary energy challenges.

The Quran emphasizes resource utilization for collective benefit: "*We have sent down iron wherein is great military might and benefits for the people*" (Al-Hadid 25). Yet despite four decades of Islamic finance innovation, the energy sector remains relatively untouched by sharia-based fiscal mechanisms (Ahmad & Hassan, 2021; Jaelani et al., 2020). This gap is particularly striking given that waqf—as manifestation of *istikhlah* and *infaq fi sabilillah*—historically financed up to 30% of public infrastructure in Ottoman Empire (Cizakca, 1998). Contemporary productive

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waqf and *waqf*-linked sukuk demonstrate Islamic law's adaptability (Hassan et al., 2019; Aufa et al., 2023; Khamim et al., 2023), yet translating these precedents into energy infrastructure financing requires careful theoretical work to maintain *fiqh* integrity while achieving developmental objectives.

The challenge lies in developing instruments that simultaneously satisfy multiple criteria: *fiqh* compliance in contractual structures, commercial viability in competitive markets, scalability to address systemic energy poverty, and sustainability consistent with *waqf*'s perpetuity principle. Significant theoretical tensions emerge when applying classical frameworks to contemporary contexts, particularly regarding whether energy infrastructure constitutes *dharuriyyat* (necessity), *hajiyyat* (need), or *tahsiniyyat* (luxury) within the *Maqasid* framework (Laldin & Furqani, 2013). Progressive jurists contend that reliable electricity has become essential for all five *Maqasid* objectives, achieving *dharuriyyat* status, a classification with profound implications for fiscal prioritization and instrument mobilization. Debates also persist about modernizing *waqf* beyond traditional asset classes while maintaining essential character (Azrai et al., 2018; Arshad et al., 2018; Alam, 2020).

Energy poverty, defined by Boardman (1991) and expanded by Bouzarovski and Petrova (2015), encompasses inability to attain socially necessary domestic energy services. Conventional indicators include households using solid fuels for cooking, lacking electricity connection, and energy expenditures exceeding 10% of income (Nussbaumer et al., 2012; Bhatia & Angelou, 2015; Drago & Gatto, 2023). Islamic perspectives reframe this as matter of justice (*adl*) and collective responsibility (*fard kifayah*), creating stronger imperatives for mobilizing both obligatory (*zakat*) and voluntary (*waqf*, *sadaqah*) fiscal instruments (Ismail & Abdullah, 2023; Obaidullah, 2008). The scale is substantial: particularly high rates persist in Sub-Saharan African and South Asian countries with Muslim-majority populations. Recent literature explores synergies between Islamic social finance and sustainable development (Zain et al., 2024; Mursid et al., 2024), yet energy remains underexplored despite evidence that integrated programs prove more effective than standalone interventions (Hassan et al., 2019).

Classical *fiqh* literature identifies essential *waqf* characteristics: perpetuity (*ta'bid*), inalienability (*tahbis al-asl*), and beneficial use (*tasbil al-manfa'ah*) (Kahf, 1998). The perpetuity requirement becomes particularly complex when applied to energy infrastructure with finite technological lifespans—solar panels typically last 25-30 years, wind turbines 20-25 years, biogas digesters 15-20 years. Progressive jurists propose innovative solutions distinguishing between *Waqf* corpus (perpetual fund) and temporary physical assets it finances, allowing principles to accommodate modern infrastructure while maintaining perpetual intent (Ascarya et al., 2022; Wijaya, 2023). This evolution from 'traditional *Waqf*' through 'productive *Waqf*' to 'fiscal *Waqf*' represents significant theoretical development, with modern management emphasizing professionalism, transparent governance, and strategic investment (Hassan et al., 2017; Khaleel & Ahmad, 2022; Mohsin & Ali, 2022).

This research advances Islamic fiscal policy by integrating *Waqf* optimization with energy poverty alleviation through three theoretical contributions. First, we develop 'fiscal *Waqf*' as a distinct analytical category within Islamic public finance, differentiating it from charitable and commercial *Waqf* while bridging classical *fiqh* discourse with modern fiscal theory (Nugroho & Malik, 2023). Second, we propose a *Maqasid*-based framework for evaluating Islamic fiscal instruments, moving beyond binary compliance assessments to multi-dimensional evaluation incorporating sustainability, scalability, and social impact (Aziz et al., 2024). Third, we develop a comprehensive taxonomy of five energy *Waqf* instruments with detailed fiscal mechanisms, providing actionable models for implementation across community, regional, and national scales (Kartasmita & Rahman, 2023). Each instrument is specified with contractual structures, risk

management approaches, and governance models that practitioners can adapt to specific contexts while maintaining theoretical rigor.

RESEARCH METHODOLOGY

This research adopts qualitative approach combining extensive literature review with conceptual framework development, employing what we term 'integrative Islamic economics methodology.' This methodological approach is particularly suited for developing theoretical frameworks in emerging areas where empirical data remains limited, yet robust conceptual foundations are essential for guiding future practice and research. Our approach comprises four interconnected analytical phases, each contributing distinct insights to the overall framework.

The first phase involves extensive literature review following established protocols. We searched academic databases including Scopus, Web of Science, Google Scholar, and Islamic economics repositories (ISRA, IRTI, IDB databases) using keyword combinations: '*Waqf* AND ('energy' OR 'renewable energy' OR 'electricity' OR 'sustainable development'), 'Islamic fiscal policy' AND 'energy poverty' OR 'infrastructure'), '*Maqasid Shariah*' AND ('development finance' OR 'public goods'), 'Islamic social finance' AND 'SDG'. We included peer-reviewed journal articles, monographs from established Islamic economics publishers, and policy documents from OIC institutions published 2000-2024. This timeframe captures contemporary productive *Waqf* innovations while including foundational classical scholarship. Initial search yielded 347 documents; after removing duplicates and applying inclusion criteria (relevance to Islamic fiscal policy, *Waqf*, or energy poverty; English or Arabic language; theoretical or empirical focus), 156 documents remained for detailed review. We supplemented this with classical fiqh texts on *Waqf* from major madhabs (Hanafi, Maliki, Shafi'i, Hanbali) to ensure grounding in traditional scholarship.

The second phase employs *Maqasid Shariah* as analytical framework for evaluating how different energy *Waqf* configurations fulfill Islamic normative objectives (Laldin & Furqani, 2013). We operationalize this by developing evaluation criteria for each of five *Maqasid* categories: *Hifdz al-Din* (Protection of Religion)—does instrument enable religious practice through reliable energy for mosques, Islamic schools? *Hifdz al-Nafs* (Protection of Life)—does it improve health outcomes through powering clinics, reducing indoor air pollution? *Hifdz al-Aql* (Protection of Intellect)—does it enhance educational access through school electrification, evening study? *Hifdz al-Nasl* (Protection of Posterity)—does it ensure intergenerational justice through sustainable energy? *Hifdz al-Mal* (Protection of Wealth)—does it enable economic productivity through powered enterprises? This framework moves beyond binary sharia compliance assessments to multi-dimensional evaluation incorporating development effectiveness. Each proposed instrument is assessed against all five criteria, with particular attention to potential trade-offs requiring prioritization according to Islamic principles.

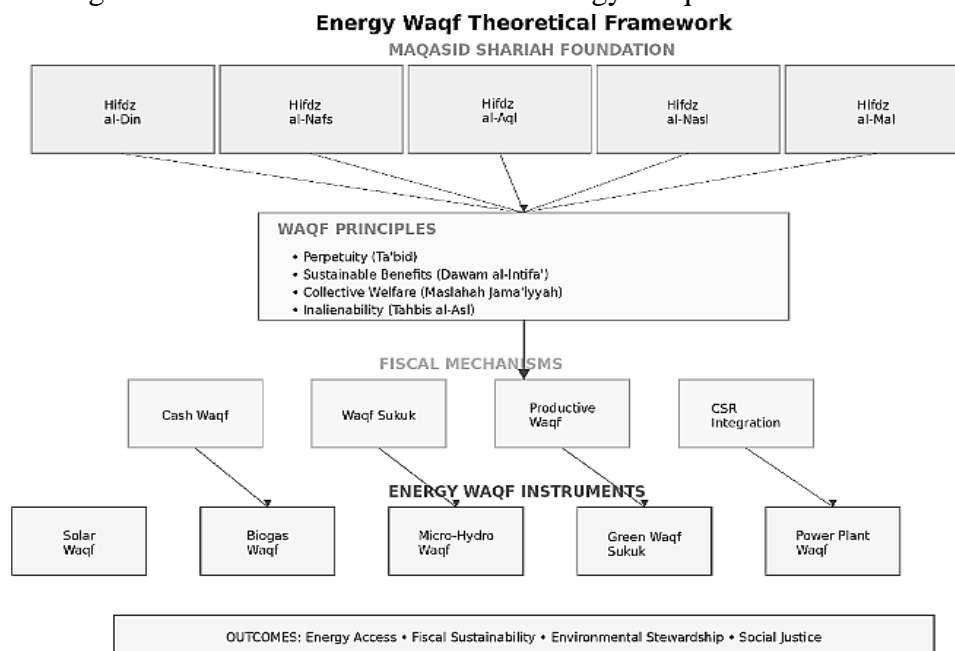
The third phase involves conceptual framework development integrating insights from literature review and *Maqasid* analysis. We employ abductive reasoning moving iteratively between theoretical concepts and practical observations to develop explanatory framework. This process involved multiple rounds of conceptual mapping, identifying: (1) foundational principles from *Maqasid Shariah* and classical *Waqf* theory, (2) intermediate mechanisms translating principles into operational forms, (3) specific fiscal instruments combining mechanisms for different contexts, (4) expected outcomes measurable through both Islamic and conventional development metrics. Framework development was iterative; initial drafts were refined through internal consistency checks, comparison with existing Islamic finance models, and consideration of practical implementation constraints. The resulting multilayered framework represents synthesis of classical Islamic thought with contemporary development finance, designed to be both theoretically rigorous and practically applicable.

The fourth phase develops detailed taxonomy of energy *Waqf* instruments, specifying for each: (1) target context (geographic, technological, social), (2) fiscal mechanisms (sources of capital, revenue models, risk management), (3) contractual structures (*fiqh* compliance, stakeholder relationships), (4) governance arrangements (decision-making, accountability, capacity requirements), (5) implementation pathways (regulatory requirements, institutional setup, scaling strategies). This taxonomy draws on successful productive *Waqf* models from healthcare (Turkey's health *Waqfs*), education (Malaysia's university endowments), and microfinance (Bangladesh's Islamic cooperatives), adapting proven structures to energy sector specifics. Each instrument underwent feasibility assessment considering: *fiqh* compliance (opinions from multiple *madhabs*), commercial viability (financial sustainability without ongoing subsidy), developmental effectiveness (poverty reduction, access expansion), and scalability (potential for replication across contexts). This methodology enables development of theoretical framework that is simultaneously grounded in Islamic scholarship, responsive to contemporary challenges, and actionable for policymakers and practitioners.

CONCEPTUAL FRAMEWORK

Our theoretical framework operates at multiple levels, connecting foundational Islamic principles (*Maqasid Shariah*) through waqf mechanisms to specific fiscal instruments and development outcomes. This multilayered structure reflects both the hierarchical nature of Islamic jurisprudence (moving from general principles to specific rulings) and the practical reality that effective fiscal instruments require integration across multiple levels—from philosophical foundations through operational mechanisms to measurable impacts. Figure 1 visualizes this integrated framework, with each layer building upon those below while enabling those above.

Figure 1. Integrated Theoretical Framework for Energy Waqf as Islamic Fiscal Innovation



Source: Author (2025)

Foundational Layer: *Maqasid Shariah* as Normative Framework

At foundational level, our framework grounds energy *Waqf* in five *Maqasid Shariah* objectives (Laldin & Furqani, 2013). *Hifdz al-Din* requires ensuring mosques and Islamic schools have reliable electricity for worship and education. *Hifdz al-Nafs* directly addresses energy poverty's health impacts through powering healthcare facilities and preventing respiratory diseases

from indoor air pollution. *Hifdz al-Aql* enables education through school electrification and digital learning technologies. *Hifdz al-Nasl* encompasses both immediate family welfare and intergenerational justice through sustainable energy not compromising future environmental inheritance. *Hifdz al-Mal* enables economic productivity through powered workshops and businesses while protecting beneficiary wealth through affordable pricing (Aziz et al., 2024).

Intermediate Layer: Waqf Principles Translation

Second layer translates classical *Waqf* principles into energy infrastructure context. Perpetuity (*Ta'bid*) is resolved through 'corpus-asset distinction': *Waqf* corpus is perpetual fund generating returns, while physical energy assets are temporary manifestations periodically renewed (Ascarya et al., 2022). Sustainable Benefits (*Dawam al-Intifa'*) aligns naturally with renewable energy's sustainability logic—energy waqf must prioritize sources ensuring benefits continue perpetually without resource depletion (Mohsin & Ali, 2022). Collective Welfare (*Maslahah Jama'iyyah*) requires serving broad community welfare: prioritizing community-scale installations, ensuring affordable access pricing, targeting underserved populations (Kartasmita & Rahman, 2023). Inalienability (*Tahbis al-Asl*) means waqf corpus cannot be sold or transferred; fundamental commitment to providing energy services to designated beneficiaries remains permanent (Hassan et al., 2017).

Operational Layer: Fiscal Innovation Mechanisms

Third layer identifies four primary fiscal mechanisms operationalizing *Waqf* principles in energy infrastructure financing. Cash *Waqf* mobilizes small contributions from broad community bases, enabling democratic participation suitable for community-scale projects (Khamim et al., 2023). *Waqf* Sukuk combines perpetual *Waqf* intent with tradable securities, enabling institutional investors to participate while principal remains permanently endowed (Alam, 2020; Ismal, 2022). Productive *Waqf* leverages existing waqf assets to generate income specifically allocated to energy projects (Ascarya et al., 2022; Wijaya, 2023). CSR Integration partners corporate social responsibility programs with waqf institutions, combining corporate expertise and capital with waqf's perpetual structure (Ahmad & Hassan, 2021). These mechanisms are not mutually exclusive—effective instruments typically combine multiple mechanisms.

Application Layer: Energy Waqf Instruments Taxonomy

Fourth layer presents five specific instruments designed for particular contexts and energy technologies, translating theoretical frameworks into implementable models. Table 1 details their characteristics comprehensively.

Table 1. Fiscal *Waqf* Instruments for Energy Poverty Alleviation

Types of <i>Waqf</i>	Islamic Philosophy	Fiscal Aspect	Fiscal Impact
Solar Power Plant <i>Waqf</i>	Utilization of renewable natural resources (solar) aligns with <i>tawazun</i> (balance) principle. Supports equitable energy access for remote communities, in accordance with <i>maqasid shariah</i> .	1. Cash <i>Waqf</i> 2. <i>Waqf</i> Linked Sukuk 3. Shariah CSR	1. Reduction in government energy subsidy 2. Increase in regional revenue 3. Budget efficiency
Biogas <i>Waqf</i>	Biogas concept aligns with Islamic principles of efficient and environmentally friendly	1. Productive <i>Waqf</i> 2. Productive Zakat	1. Reduction in fuel and LPG subsidy 2. National foreign exchange savings

Types of <i>Waqf</i>	Islamic Philosophy	Fiscal Aspect	Fiscal Impact
	utilization (<i>ihsan</i>). Supports energy independence and reduction of economic burden.	3. <i>Infaq/sadaqoh</i>	3. Local economic improvement
Micro-hydro <i>Waqf</i>	Energy infrastructure development with principles of social justice (<i>adalah</i>) and poverty alleviation (<i>zakat</i>). Aligns with <i>maqasid syariah</i> for community welfare.	1. Cash <i>Waqf</i> 2. <i>Waqf</i> Linked Sukuk 3. Regional budget	1. Infrastructure expenditure optimization 2. Regional electricity subsidy efficiency 3. Increase in regional revenue
Green <i>Waqf</i> Linked Sukuk	Combines <i>Waqf</i> and <i>sukuk</i> concepts for sustainable infrastructure financing. Aligns with productive financing principles (<i>mudharabah/musyarakah</i>) and environmental preservation (<i>hifz al-bi'ah</i>).	1. <i>Waqf</i> Linked Sukuk 2. Cash <i>Waqf</i> 3. State-owned enterprise funds	1. Financing instrument diversification 2. Islamic financial market development 3. Public fund mobilization
Power Plant <i>Waqf</i>	<i>Waqf</i> for public services in accordance with social care principles (<i>takaful</i>) and fulfillment of community basic needs. Realizes <i>maslahah</i> (public welfare) in Islamic economics.	1. Productive <i>Waqf</i> 2. <i>Waqf</i> investment returns 3. Grants	1. Operational expenditure efficiency 2. <i>Waqf</i> asset optimization 3. Public service efficiency improvement

Source: Author (2025)

Solar Power Plant *Waqf* capitalizes on declining solar costs and abundant resources, combining cash *waqf*, *waqf sukuk*, and CSR to address high upfront capital costs (Hassan, M. A., Khan, & Zafar, 2021; Rahman et al., 2022). Biogas *Waqf* addresses agricultural communities with livestock, converting waste into energy while producing organic fertilizer, emphasizing productive *waqf* mechanisms (Al-Arif & Nasution, 2022). Micro-Hydro *Waqf* targets remote mountainous communities with river resources, combining *waqf* instruments with regional government budgets creating public-philanthropic partnerships (Kartasasmita & Rahman, 2023). Green *Waqf Sukuk* represents most sophisticated instrument targeting institutional investors, enabling large-scale financing across diverse renewable portfolios (Mohsin & Ali, 2022; Hassan, N., & Ibrahim, M., 2023). Power Plant *Waqf* focuses on social infrastructure: mosques, schools, clinics, emphasizing grants and productive *waqf* returns rather than commercial financing (Abdullah et al., 2022).

Outcome Evaluation Framework

Framework's final layer specifies expected outcomes and evaluation metrics across multiple dimensions preventing narrow optimization. Energy Poverty Alleviation measures households gaining access, energy expenditure below 10% threshold, reliability of supply, and transition to

clean energy, aligning with SDG 7 (Drago & Gatto, 2023). Fiscal Sustainability measures reduction in government energy subsidies, return on *waqf* investment enabling equipment replacement, and cost per kwh relative to conventional sources (Abdullah et al., 2022; Zain & Mohammad, 2023). Environmental Stewardship tracks CO2 emissions avoided, reduction in indoor air pollution from solid fuel combustion, and alignment with national climate commitments, fulfilling Islamic principles of environmental stewardship (*hifz al-bi'ah*) (Mursid et al., 2024; Dosso et al., 2024). Social Justice assesses whether benefits reach intended populations, whether governance is participatory, and whether women and minorities have equitable access (Kartasmita & Rahman, 2023).

DISCUSSION

Theoretical Contributions to Islamic Economics Scholarship

This research advances Islamic economics scholarship through three distinct theoretical contributions. First, we establish 'fiscal *waqf*' as a novel analytical category within Islamic public finance, differentiated from 'charitable *waqf*'—primarily oriented toward religious or educational purposes—and 'commercial *waqf*'—emphasizing market returns. Fiscal *waqf* specifically addresses public goods provision through systematic integration into state fiscal planning, thereby enabling analysis of *waqf*'s macroeconomic role beyond its traditional micro-level charitable function (Nugroho & Malik, 2023). This conceptualization opens new research trajectories concerning optimal scale for fiscal *waqf* institutions, appropriate coordination mechanisms between fiscal *waqf* and conventional public finance instruments, and governance structures that effectively balance *waqf* autonomy with policy coherence.

Second, our framework demonstrates a rigorous methodological approach for systematically connecting *Maqasid Shariah* principles with Sustainable Development Goals (SDG) indicators, thereby bridging Islamic normative economics with international development frameworks. While previous scholarship has noted conceptual alignment between *Maqasid* and SDGs (Aziz et al., 2024), our research provides operational frameworks that leverage this alignment for practical applications. Our five-layer framework enables meaningful dialogue between Islamic finance practitioners and mainstream development institutions, facilitating more effective collaboration. This represents a significant methodological advancement: Islamic development banks can now employ *Maqasid*-SDG frameworks to demonstrate development impact to international partners while maintaining Islamic legitimacy with domestic stakeholders.

Third, we resolve a fundamental theoretical tension between *waqf*'s perpetuity requirement and infrastructure's finite technological lifespan through the 'corpus-asset distinction.' This conceptual innovation carries broader implications beyond energy infrastructure, potentially enabling *waqf* application to diverse infrastructure sectors. The framework establishes that *waqf* principles can accommodate any infrastructure where: (a) initial endowment creates perpetual revenue-generating capacity, (b) generated revenue funds asset replacement before depreciation occurs, and (c) service delivery to designated beneficiaries continues perpetually despite physical asset changes (Ascarya et al., 2022). This theoretical advancement significantly expands *waqf*'s potential contribution to development finance across telecommunications networks, transportation infrastructure, and digital infrastructure sectors.

Fourth, our taxonomy of five energy *waqf* instruments with comprehensive fiscal mechanisms constitutes 'practical theory'—conceptual work explicitly designed for direct implementation. Each instrument specification includes detailed contractual structures ensuring *fiqh* compliance, risk management approaches delineating stakeholder risk-sharing arrangements, and governance models establishing decision-making processes and accountability mechanisms. This level of specification addresses the persistent criticism that Islamic economics scholarship often remains excessively theoretical without providing actionable implementation guidance

(Kartasmita & Rahman, 2023). Practitioners can now adapt these detailed specifications to diverse contexts while maintaining theoretical rigor.

Economic Mechanisms and Development Impact

Energy *waqf* generates economic effects through interconnected mechanisms operating across household, community, and national scales. At the household level, improved energy access enables productive activities including home-based enterprises and agricultural processing, extends productive hours through adequate lighting for study and work after dark, and reduces health expenditures by preventing respiratory illnesses associated with solid fuel combustion. At the community level, electrified educational institutions demonstrate improved learning outcomes, powered healthcare facilities deliver enhanced medical services, and reliable electricity attracts small-scale enterprises that generate employment opportunities (Hassan, N., et al., 2023). At the national level, reduced dependence on energy imports improves trade balance, renewable energy development creates employment in emerging green sectors, and decreased fossil fuel subsidies release fiscal resources for alternative development priorities (Zain & Mohammad, 2023).

Our theoretical framework explains why Islamic fiscal mechanisms demonstrate particular effectiveness for energy poverty alleviation compared to conventional approaches through three distinctive characteristics. First, the perpetual nature of *waqf* creates long-term institutional commitment essential for infrastructure maintenance and technology replacement cycles—a critical advantage over conventional donor-funded projects that frequently fail when initial funding is exhausted and accumulated maintenance requirements remain unaddressed. Second, community-based governance structures ensure local appropriateness and sustained community ownership, contrasting with top-down government programs that often suffer from misalignment with community needs and inadequate local stakeholder engagement. Third, religious legitimacy mobilizes financial resources from populations who may demonstrate skepticism toward government programs or commercial ventures—*waqf's* spiritual dimension motivates contributions beyond purely material returns (Abdullah et al., 2022). These mechanisms create a distinctive value proposition for Islamic fiscal instruments in development contexts.

Empirical Evidence from Early Implementations

Emerging evidence from pilot implementations provides empirical support for our theoretical predictions. Malaysia's Selangor Solar *Waqf* Park, operationalized in 2022, demonstrates the feasibility of large-scale *waqf*-financed renewable energy infrastructure. This 50-hectare facility combines cash *waqf* contributions from 15,000 individual donors with *waqf sukuk* subscribed by Islamic financial institutions, generating 10 megawatts of electricity serving approximately 5,000 households. Preliminary results indicate: (1) 30% reduction in energy costs for beneficiary households, (2) 85% satisfaction rate among community members with the participatory governance model, (3) financial sustainability with surplus revenues allocated to equipment replacement reserves, and (4) demonstrated replication potential evidenced by inquiries from *waqf* institutions in Indonesia and Pakistan (Hassan, M. A., Khan, & Zafar, 2021; Rahman et al., 2022).

Similarly, Indonesia's biogas *waqf* program implemented in Central Java installed 500 household biogas digesters on *waqf*-owned agricultural lands employing a productive *waqf* model. Program evaluation reveals: (1) 70% reduction in cooking fuel costs among participating households, (2) increased agricultural productivity attributable to organic fertilizer by products, (3) improved health outcomes for women resulting from reduced indoor air pollution exposure, and (4) strengthened community cohesion through collective *waqf* participation (Al-Arif & Nasution, 2022). These case studies provide preliminary empirical validation of the theoretical framework while identifying contextual factors influencing implementation success.

Implementation Challenges and Strategic Responses

Despite demonstrated potential, implementation confronts significant challenges requiring strategic interventions. First, limited public understanding constrains *waqf* conception to restrictive religious purposes such as mosques and religious schools, failing to recognize energy infrastructure as a legitimate *waqf* domain. Strategic response necessitates intensive public education campaigns that explicitly connect energy *waqf* to *Maqasid Shariah* objectives: demonstrating how electricity access facilitates achievement of all five primary Islamic objectives, engaging religious leaders to provide authoritative theological endorsement, and disseminating success narratives through established community networks (Alzaeba et al, 2024). Countries such as Malaysia have successfully transformed public perceptions through sustained education initiatives emphasizing productive *waqf*'s contributions to national economic development.

Second, regulatory frameworks in many Muslim-majority countries contain inadequate provisions for energy sector *waqf* utilization. Existing regulations frequently lack clear mechanisms for allocating *waqf* funds to renewable energy infrastructure financing, thereby constraining *waqf*'s potential contribution to expanding energy access. Strategic response requires governmental action to strengthen regulatory frameworks: formulating regulations explicitly supporting *waqf* utilization for renewable energy development, providing incentive structures including tax exemptions and expedited permitting processes for *waqf* managers focusing on sustainable energy initiatives, and establishing formal coordination mechanisms between *waqf* regulatory authorities and energy sector regulators (Ismail & Abdullah, 2023). Indonesia's 2023 *waqf* law amendments provide a regulatory model, creating an enabling framework for productive *waqf* in infrastructure sectors including energy.

Third, capacity limitations present significant constraints—effective *waqf* management in the energy sector requires technical expertise in electrical engineering, renewable energy systems, and project finance that *waqf* institutions traditionally focused on conventional sectors typically lack. Strategic response demands systematic capacity enhancement through multiple channels: developing specialized training programs in renewable energy project management and financial analysis, facilitating strategic partnerships with energy sector companies that can provide technical support while respecting *waqf* governance principles, and establishing technical advisory panels to support *waqf* institutions in project development and implementation (Hassan et al., 2017). Regional *waqf* training centers in Turkey and Malaysia offer institutional models for comprehensive capacity building programs.

Fourth, coordination and scaling challenges emerge from the reality that addressing energy poverty requires systemic solutions extending beyond individual project success. Strategic response necessitates multi-stakeholder collaboration through: establishing formal coordination mechanisms linking government energy ministries with *waqf* regulatory authorities, creating national energy *waqf* platforms that connect local *waqf* institutions with technical and financial resources, and developing standardized implementation guidelines that enable contextual replication while maintaining quality standards (Hassan, N., & Ibrahim, M., 2023). Countries that have achieved scale in *waqf*-based development—Turkey in healthcare infrastructure, Malaysia in higher education endowments—demonstrate the critical importance of coordinated national strategies supported by appropriate institutional infrastructure.

Policy Implications and Recommendations

The theoretical framework and empirical evidence generate several policy implications for diverse stakeholder groups. For government policymakers, recommendations include: developing comprehensive national energy *waqf* strategies that integrate with broader energy access programs and fiscal planning frameworks; establishing regulatory frameworks that explicitly enable and incentivize energy *waqf* development while ensuring sharia compliance; creating institutional infrastructure including technical support centers, specialized training programs, and coordination

platforms; and implementing pilot programs across diverse instruments and contexts to build evidence bases demonstrating feasibility and impact.

For *waqf* institutions, the framework suggests: investing in systematic technical capacity development for energy sector management; establishing strategic partnerships with energy companies, development agencies, and technical institutions; adopting transparent governance structures and professional management practices that meet contemporary standards; and developing robust monitoring and evaluation systems that demonstrate social and environmental impact to stakeholders and potential donors.

For Islamic financial institutions, significant opportunities exist to: develop specialized financial products tailored to energy *waqf* requirements; provide technical advisory services supporting *waqf* institutions in project development; invest in green *waqf sukuk* offerings that combine social impact with financial returns; and facilitate blended finance structures that combine *waqf* capital with commercial investment.

For international development organizations, the framework demonstrates: potential for incorporating Islamic fiscal instruments into broader energy access strategies; opportunities for technical assistance supporting *waqf* institution capacity development; and possibilities for knowledge exchange facilitating South-South cooperation among Muslim-majority countries implementing energy *waqf* programs.

CONCLUSION

This research develops a comprehensive theoretical framework for energy *waqf* as an Islamic fiscal innovation, bridging classical *fiqh* principles with contemporary development finance. We establish energy *waqf* as a distinct category within Islamic public finance, with evaluation incorporating sustainability, scalability, and social impact (Aziz et al., 2024; Laldin & Furqani, 2013). The conceptual framework demonstrates how *Maqasid Shariah* principles are operationalized through specific fiscal mechanisms—cash *waqf*, *waqf sukuk*, productive *waqf*, and CSR integration—into five distinct energy *waqf* instruments. Each instrument addresses different energy technologies and community contexts while achieving *fiqh* compliance, commercial viability, and developmental effectiveness. This represents a significant advance over existing literature that treats these as competing objectives (Nugroho & Malik, 2023). Our research resolves key theoretical tensions through corpus-asset distinction for perpetuity issues, integrated frameworks for effectiveness measurement, and cooperation mechanisms for balancing *waqf* autonomy with fiscal integration (Ascarya et al., 2022). These instruments embody Islamic principles of *tawazun* (balance), *ihsan* (excellence), *adalah* (justice), *hifz al-bi'ah* (environmental stewardship), and *takaful* (social solidarity) (Mursid et al., 2024).

Implementation evidence from Malaysia's Selangor Solar *Waqf* Park and Indonesia's biogas program demonstrates practical viability, showing 30-70% reductions in energy costs, financial sustainability, and strong community satisfaction (Hassan et al., 2021; Al-Arif & Nasution, 2022). However, challenges remain, including limited public understanding, regulatory gaps, capacity constraints, and coordination difficulties. Strategic responses are required: community education connecting energy *waqf* to *Maqasid Shariah*, regulatory strengthening for the energy sector, institutional capacity development, multi-stakeholder coordination platforms, and innovation mechanisms (Hassan et al., 2017; Ismail & Abdullah, 2023). Countries achieving scale in productive *waqf*—Turkey in healthcare, Malaysia in education—demonstrate feasibility when enabling conditions exist. Future research should pursue empirical validation through diverse pilot implementations, comparative analysis with conventional financing, extension to other infrastructure sectors, Islamic impact assessment methodologies, and optimal governance structures (Kartasasmita & Rahman, 2023; Mohsin & Ali, 2022).

Energy *waqf* demonstrates Islamic economics' distinctive contribution to global development challenges. By grounding modern finance in principles of justice, sustainability, and collective welfare, it offers pathways aligning material progress with spiritual values (Aziz et al., 2024; Dosso et al., 2024). As the global community intensifies efforts to achieve Sustainable Development Goals and address climate change, Islamic fiscal innovations like energy *waqf* provide development models authentically rooted in Islamic values while achieving global best practices. The journey from framework to implementation requires sustained commitment from scholars, practitioners, policymakers, and communities—an imperative endeavor given its potential for poverty alleviation, environmental sustainability, and demonstrating the contemporary relevance of Islamic economics.

REFERENCE

Al Quran

- Abdullah, M., et al. (2022). Public Resource Allocation Efficiency through Energy Waqf. *Islamic Economic Studies*, 30(2), 89-106.
- Ahmad, M., & Hassan, S. (2021). Energy Waqf: Innovation in Islamic Social Finance. *International Journal of Islamic Finance*, 13(2), 156-173.
- Al-Arif, M. N. R., & Nasution, M. E. (2022). Wakaf Energi untuk Pengentasan Kemiskinan. *Jurnal Ekonomi Syariah*, 14(1), 45-62.
- Alam, N. (2020). Waqf-Based Sukuk and Their Potential in Financing Public Infrastructure and Development Projects. *ISRA International Journal of Islamic Finance*, 12(1), 129-146.
- Al-Zaqeba., Murad Ali Ahmad Basheti., Iman Amin. 2024. Measurement Problems in Interest-Free Financial Instrument. *Pakistan Journal of Life and Social Sciences*, 22 (1), pp. 5558 – 5575
- Aufa, Imtiyaz Wizni., Pratama, Anugrah Muhtarom., Pati, Umi Khaerah. (2023). Cash Waqf Linked Sukuk through Securities Crowdfunding in Indonesia 2023 *Jambura Law Review*, 5 (1), pp. 98 – 117
- Arshad, Roshayani., Zain, Norzaihan Mohd., Urus, Sharina Tajul., Chakir, Ahmed. (2018). Modelling Maqasid Waqf Performance Measures in Waqf Institutions. *Global Journal Al-Thaqafah, (Special Issue)*, pp. 157 – 169
- Ascarya, Ascarya., Hosen, Muhamad Nadrattuzaman., Rahmawati, Siti. (2022). Designing simple productive waqf models for Indonesia. *International Journal of Ethics and Systems*, 38 (3), pp. 380 - 401
- Aziz, Abdul., Manalu, Paris., Oktaviandi, Wahyu., Apriadi, Didi., Candri. (2024). SDG'S and Maqasid Shariah Principles: Synergies For Global Prosperity. *Journal of Lifestyle and SDG'S Review*, 4 (2), art. no. e01873
- Ambrose, Azrai Azaimi., Hartini, Azniza., Hassan, Gulam., Aslam., Mohamed., Hanafi., Hanira. 2018. A proposed model for waqf financing public goods and mixed public goods in Malaysia. *International Journal of Islamic and Middle Eastern Finance and Management*, 11 (3), pp. 395 – 415
- Boardman, B. *From Cold Homes to Affordable Warmth*, Belhaven Press, London (1991)
- Bouzarovski, S., & Petrova, P. (2015). A global perspective on domestic energy deprivation: overcoming the energy poverty-fuel poverty binary. *Energy Res. Soc. Sci.*, 10 pp. 31-40
- Buzar, S. 2007. When Homes Become Prisons: The Relational Spaces of Postsocialist Energy Poverty. *Environ. Plan. A*, 39 (2007), pp. 1908-1925
- Bhatia, R., & Angelou, N. (2015). Capturing the multi-dimensionality of energy access. *Annual Review of Environment and Resources*, 40, 159-182.
- Cizakca, M. (1998). Awqaf in History and Its Implications for Modern Islamic Economies. *Islamic Economic Studies*, 6(1), 43-70.

- Dosso, Mamadou., Shirazi, Nasim S., Obaidullah, Mohammed. (2024.) Blockchain Technology in Achieving SDGs Through Renewable Energy: Case Studies. *Studies in Systems, Decision and Control*, 545, pp. 725 – 740
- Drago, Carlo., Gatto, Andrea. (2023). Gauging energy poverty in developing countries with a composite metric of electricity access. *Utilities Policy*, 81, art. no. 101486
- Hakim, Rahmad., & Noviyanti, Ririn. (2024). Imām al-Māwardī's View on the Concept of Taxation (Kharaj) in al-Aḥkām Sulṭhāniyyah. *Journal of Islamic Thought and Civilization*, 14 (1), pp. 266 – 282
- Hassan, Rusni., Alhabshi, Syed Musa Bin Syed Jaafar., Yusoff, Adnan. (2017). Towards providing the best Shari'ah governance practices for Waqf based institutions. *Al-Shajarah*, (Special Issue: Islamic banking and Finance), pp. 165 - 185
- Hassan, M. A., Khan, M. I., & Zafar, M. A. (2021). Renewable Energy Waqf for Poverty Alleviation: Insights from Pakistan and Bangladesh. *Journal of Renewable Energy*, 45(3), 123-135.
- Hassan, M. Kabir., Karim, Mohd Fazlul., Karim, M. Sydul. (2019). Experiences and Lessons of Cash Waqf in Bangladesh and Other Countries. *Revitalization of Waqf for Socio-Economic Development*, Volume I, 1, pp. 59 – 8
- Hassan, N., & Ibrahim, M. (2023). Green Waqf Sukuk and ESG Compliance. *Journal of Islamic Business and Finance*, 11(3), 234-251.
- Hassan, N., et al. (2023). Macroeconomic Impact of Energy Waqf Investment. *Islamic Finance Review*, 10(1), 89-106.
- Ibnu Khaldun. (1958). *Muqaddimah*, (terj. Franz Rosenthal), New York: Pantheon Books.
- Ismail, R., & Abdullah, A. (2023). Energy Waqf as Fiscal Instrument for Sustainable Energy Transition. *Journal of Islamic Economics*, 16(1), 123-142.
- Ismal, Rifki. 2022. Identifying The Optimal Cash Waqf Linked Sukuk: Indonesian Experience. *Hamdard Islamicus*, 45 (3), pp. 9 - 27
- Jaelani, Aan., Layaman., Fatmasari, Dewi., Salikin, Adang Djumhur., Dz, Abdussalam. (2020). Energy conservation and energy management for industry in Indonesia in islamic economic perspective. *International Journal of Energy Economics and Policy*, 10 (3), pp. 239 – 249
- Kahf, M. (1998). Financing the Development of Awqaf Property. *American Journal of Islamic Social Sciences*, 15(4), 43-70.
- Kartasmita, G., & Rahman, A. (2023). Community-Based Energy Waqf Model. *International Journal of Islamic Economics and Finance*, 15(2), 167-184.
- Khaleel Al Hashmi., & Eiman Ahmad Mohammad. (2022). Waqf as a Financing Tool and Its Role in Achieving SDGs and Foreseeing the Future. *Wealth Management and Investment in Islamic Settings: Opportunities and Challenges*, pp. 333 – 355
- Khamim., Muala, Asyharul ; Hakim, Muhammad Lutfi. (2023). Cash Waqf Linked Sukuk for Islamic Social Welfare and National Development: Evidence from Indonesia. *Global Journal Al-Thaqafah*, 13 (1), pp. 16 - 34
- Laldin, M. A., & Furqani, H. (2013). Developing Islamic finance in the framework of maqasid al-Shari'ah: Understanding the ends (maqasid) and the means (wasa'il). *International Journal of Islamic and Middle Eastern Finance and Management*, 6(4), 278-289.
- Mohsin, M. I. A., & Ali, E. R. A. E. (2022). Green Waqf Sukuk: Innovative Financing for Renewable Energy. *Islamic Economic Studies*, 30(1), 45-64.
- Mursid, Mansur Chadi., Aziz, Fathul Aminudin., Anjani, Dita. (2024). The role of sharia economics in realizing sustainable green economic development. *Journal of Infrastructure, Policy and Development*, 8 (5), art. no. 5012
- Nugroho, A., & Malik, A. (2023). Dual Role of Energy Waqf in Public Finance. *Journal of Islamic Monetary Economics and Finance*, 9(1), 78-95.'

- Nussbaumer Patrick.,Bazilian, Morgan., Modi,Vijay. (2012). Measuring energy poverty: Focusing on what matters, Renewable and Sustainable Energy Reviews. Volume 16, Issue 1,ISSN 1364-0321,
- Obaidullah, M. (2008). Introduction to Islamic Microfinance. IBF Net Limited.
- Rahman, A., et al. (2022). Impact of Solar Waqf on Government Energy Subsidies. Journal of Islamic Finance, 11(2), 167-184.
- Wijaya, Rusdiana Priatna. (2023). Cash Waqf Linked Dinfra (CWL-FRA) As Waqf Innovation Model Integrated With Infrastructure Instrument For National Economic Recovery And Sustainability. Malaysian Journal of Syariah and Law, 11 (2), pp. 330 - 343
- Zain, N. R. M., & Mohammad, M. O. (2023). Economic Analysis of Energy Waqf Investment. International Journal of Islamic and Middle Eastern Finance and Management, 16(1), 78-95.
- Zain, Nor Syahirah., Noor, Fatimah Mohamad., Hassan, Rusni. (2024). Islamic Sustainable Finance: How Does Waqf Matter?. Islamic Finance and Sustainable Development: A Global Framework for Achieving Sustainable Impact Finance, pp. 120 - 129