The International Tracking Standard Foundation

Founder of I-REC

South South Korea Country Assessment Report

Country

The Republic of Korea ("South Korea") is a major industrialized nation in East Asia, heavily reliant on coal, LNG, and nuclear power. Renewables account for around 9% of its electricity supply, and the grid remains isolated with limited corporate PPA options. Despite these constraints, there is a growing rooftop solar capacity.

Government Support

While there is no official endorsement, South Korean authorities have not objected to I-REC(E) so long as it does not overlap with the domestic RPS-based REC system.

Generation, Demand, and Market for I-REC(E)

Over 90% of South Korea's electricity comes from fossil and nuclear sources, with renewables slowly expanding under national plans. Domestic REC issuance covers electricity sold to KEPCO or KPX, leaving onsite/self-consumption renewables excluded. Corporate buyers, especially RE100 members, increasingly seek instruments like I-REC(E) to track and claim onsite renewable usage not covered by the domestic system.

Aspects to Consider for I-REC(E) Issuance

- Domestic REC System: I-REC(E) issuance will be limited to generation not eligible under South Korea's national REC scheme.
- Onsite Self-Consumption: Often excluded from domestic REC issuance and anticipated to be eligible for I-REC(E) issuance.
- Government Subsidies: Subsidized projects may share attribute ownership with the government.
- Double Counting: Robust verification and documentation ensure no overlap with domestic certificates.

Opinion of the Secretariat

South Korea neither formally endorses nor prohibits I-REC(E). Allowing issuance for projects excluded from domestic REC eligibility addresses corporate demand for verified clean energy and supports broader renewable market development without risking double counting.

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Summary:
The Republic of Korea ("South Korea" hereafter) has a national energy attribute certificate (EAC) system, which includes domestic issuance rules, a national entity responsible for managing the market and issuing certificates, and an associated renewable portfolio standard (RPS) under which domestic EACs are used as compliance instruments. The International Tracking Standard Foundation (the I-TRACK Foundation) recognizes the autonomy of the South Korean system and will restrict any engagement in the country to areas that do not in any way compete with the domestic tracking system or create a risk of double counting.

In 2023, multiple entities contacted the I-TRACK Foundation to ask if it is possible to onboard the country and issue I-REC(E) for South Korean generation assets that are not eligible to issue EACs under the domestic system. Notably, this includes clusters of off-grid self-consumption assets serving onsite load, with a total peak capacity of around 3.2 gigawatts. Generation from these assets does not meet domestic issuance criteria and does not receive EACs under the national scheme. Market actors have expressed interest in issuing I-REC(E) from these assets, for onward sale or self-consumption.

Prima facie, these assets do meet I-REC(E) issuance requirements, and do not pose a risk of double counting against the national EAC scheme. Further, the authors of this report have not been able to identify any policy or regulatory documents that would prohibit the issuance of I-REC(E), provided there is no overlap with domestic issuance. Based on these principles—and in consultation with domestic, non-profit, and private sector actors—the I-TRACK Foundation hereby approves the issuance of I- REC(E) in South Korea. Issuance will only be permitted for generations that:

(i) is not eligible to issue EACs under national systems,
(ii) meets all requirements of the Tracking Standard and the Code for Electricity, and
(iii) the (local) Issuer deems to be at no risk of conflict with national policy or law and presents no other risk of double counting.

Policy mechanism	Yes / no	Implication
RPS	Yes	A National REC mechanism is used by obligated entities to demonstrate compliance with the RPS.
National REC mechanism	Yes	As above. The I-TRACK Foundation will only permit asset registration and issuance for projects that are prohibited from participating in the domestic South Korean REC system, to avoid risk of double counting.
Feed in Tariff	Previous	None currently active. Details are provided in this report.
Other financial support	Yes	Government subsidies for on-site generation exist and affect ownership of environmental attributes. Risks and mitigations are discussed in this report.
Green Premium	Yes	Allows consumers to purchase national RECs. Risks are fully mitigated by avoidance of double counting with national REC scheme.

As described in this document, the opportunity for I-REC(E) issuance in South Korea is restricted to assets that are not eligible for domestic EAC issuance, and which do meet I-REC(E) issuance criteria. The introduction of I-REC(E) into South Korea creates an immediate opportunity to provide financial support to such projects. Approval of South Korea for restricted I-REC(E) issuance will facilitate tracking and reporting of self-consumed renewables and increase the liquidity of unbundled EACs, with minimal risk of double counting or overlap with domestic systems. The I-TRACK Foundation has received no objection to the approval of I-REC(E) issuance, and hereby

Country/Region name:
South Korea is a top ten greenhouse gas emitter among the signatories of the UN Framework Convention on Climate. It is the 14th country to legislate carbon neutrality by 2050 with an interim target of 40% emissions reduction by 2030 compared to 2018 levels. South Korea retains high energy-intensive industries and is dependent on energy imports, with over 90% of energy needs met by imported fossil fuels.

Population:	51.6 million	Total consumption/GDP:*	82.4 (2005=100)
GDP growth rate:	2.56 %/year	CO2 Emissions:	11.6 tCO2/capita
Energy independence:	19.8%	Rate of T&D power losses:	3.41%

Generation and demand: (type, MW, TWh)
Generation profile: South Korea relies on coal, LNG, and nuclear power to produce 90% of its electricity, with renewables accounting for around 9%. Although there has been a decrease in coal power generation, coal still represents approximately 34% of the total electricity generation. Approximately 27% of electricity is generated from nuclear power with the current administration targeting at least 30% by 2030. South Korea remains one of the world's largest coal importers, and reducing its reliance on coal and increasing the share of renewables is a focus of the government's energy policy. In October 2020 the government announced its goal of net-zero emissions by 2050, and a shift away from coal will be key to meeting this.

Demand for renewables: South Korean demand for renewables comes largely from (1) voluntary initiatives such as RE100 and (2) the national compliance Renewable Portfolio Standard (RPS) scheme. Total electricity demand in South Korea was 588 TWh in 2023. Within total demand, there is growing momentum for companies to procure 100% clean energy, evidenced by 33 major South Korean companies having joined RE100 as of June 2023, with a combined 72TWh of electricity demand per year. Further, according to the report, "Renewable Energy Demand in South Korea"[1] the total renewable demand from voluntary initiatives ranges from an estimated 80.3 TWh under a baseline scenario up to 98.3 TWh under a scenario in which the renewable electricity share reaches 60% by 2030. The report suggests that the five leading manufacturing sectors with high trade exposure make up about 80% of the total renewable energy demand. With respect to projections, the total renewable energy demand for 2030 is forecast between 157.5 TWh and 172.3 TWh.

Access: Under legacy electricity market structures, it was not feasible for South Korean entities to procure renewable energy separately from the national grid. While South Korean companies can access cost-effective renewable electricity for operations in Europe, the US, and in other parts of the world, access in South Korea is costly and lacks both physical and regulatory infrastructure. Accordingly, South Korea is regularly cited by RE100 members as one of the most challenging markets to buy renewables due to the lack of procurement options, cost, and limited supply. To address this issue, the South Korean government launched K-RE100 in 2021, and the organization has supported the deployment of increased access options since its formation. The introduction of additional REC systems may directly contribute to increased access.

RE Market Potential: South Korea's physical potential for renewable is significant. The usable physical potential, which considers geographic conditions, is about 163.800 billion tons of oil equivalent (TOE). Technological potential, which refers to the amount of energy that can be generated with the

[1] https://kosif.org/wp- content/uploads/mangboard/2023/04/20/F1251_2030_Renewable_Energy_Demand_in_South Korea_EnglishOnline_Final%20(1). pdf

current technology is estimated at 1.800 billion TOE. However, investments and policy support for domestic renewables have been relatively slow. Bloomberg NEF expects the electricity generation costs for solar PV and onshore wind to fall below those of coal, reaching grid parity by around 2027, and the South Korea Energy Economics Institute forecasts that the electricity cost from solar PV will decline to KRW
121.2 per kWh after 2025. This is close to the average industrial rate of KRW 120/kWh in 2023, which suggests that the demand for PPAs will further grow as PPAs become more attractive for businesses.

Energy sector and NDCs: South Koreas' Renewable Energy 3020 Plan (RE 3020) seeks to secure 20% of energy from renewables by 2030. The RE 3020 plan indicates that a total of 48.7 GW of renewables should be added in 2017–2030, composed of 30.8 GW solar and 16.5GW wind. Under its NDC, South Korea has an absolute decarbonization target of 40% below 2018 levels by 2030. While sectoral decarbonization targets have changed over time, the absolute reduction target has remained consistent. Recent adjustments mark a growing reliance on overseas reduction (from 33.5 Mt to 37.5 Mt), the introduction of various hydrogen sources (from 7.6 to 8.4 Mt), and carbon capture utilization and storage (CCUS) (10.3 to 11.2 Mt). The industrial sector decarbonization target was reduced from 14.5% reductions in 2021 to 11% in 2023 (expanding caps from 29.8 Mt to 37.9 Mt) (MOE, 2023). Contribution of renewable generation will play a key role in achieving decarbonization targets.

Electrical interconnection and import/export:

South Korea's grid is an isolated system with no cross-border transmission. All electricity demand is met by local production. In the long-term, network interconnections, such as the Asian Super Grid project, might allow electricity trade between Northeast Asian countries, contributing to energy security.

Electricity market stakeholders and structure:

Multiple government actors are involved in developing and implementing renewable energy policies in South Korea. The principal government agency, which is de facto responsible for developing renewable energy policies and securing the relevant budget, is the Ministry of Trade, Industry, and Energy (MOTIE). In addition to government actors, there are private actors and state-owned enterprises that participate in the energy and electricity sectors. The structure of the electricity market features a regulated monopoly with KEPCO owning transmission and distribution systems. The wholesale market is managed by KPX, where electricity (including renewables) is traded. Generation includes KEPCO's subsidiaries, which primarily operate coal, natural gas, hydro, and nuclear, alongside various IPPs.

Ministry of Trade, Industry, and Energy: MOTIE is the principal agency responsible for developing and implementing national energy policies, including for renewables. It reviews and sets a Basic Energy Plan every five years, outlining the nation's energy policy for the next 20 years. The Energy Committee, part of MOTIE, reviews these plans, which require approval from a cabinet council of ministers. MOTIE also oversees comprehensive policies for electricity demand and supply, updating a master plan every two years, known as the Basic Plan on the Long-Term Supply and Demand of Electricity.

South Korea Power Exchange (KPX): KPX operates the day-ahead wholesale market and manages the trading of RECs. All grid-connected generation must be dispatched through KPX, which oversees bidding, metering, settlements, and market monitoring. KPX oversees grid connections, ensuring a balanced supply and demand of electricity across the nation. The agency also ensures compliance with operational codes that include minimum levels of operational reserves as part of market rules.

South Korea Electric Power Corporation (KEPCO): KEPCO is a state-owned enterprise with exclusive rights to conduct the transmission, distribution, and sales of electricity in South Korea. It owns and operates the transmission and distribution systems and acts as the de facto single wholesale buyer and only retailer. KEPCO purchases electricity from KPX and supplies it to end users, generating power through its six wholly owned subsidiaries: South Korea South-East Power, South Korea Midland Power, South Korea Western Power, South Korea East-West Power, South Korea Hydro & Nuclear Power, and South Korea Southern Power. These subsidiaries operate most of South Korea's coal, natural gas, hydro, and nuclear plants. Despite this monopoly, independent power producers (IPPs) also contribute significantly to the power generation landscape, with around 25 power generation companies in total, including notable IPPs like POSCO Energy, GS EPS, GS Power, SK E&S, and Pocheon Power.

South Korean Energy Agency (KEA): Operating under MOTIE, KEA implements policies aimed at promoting renewable energy and enhancing energy efficiency. It carries out business for greenhouse gas reduction, development, and promotion of energy technologies, as well as energy-saving initiatives. KEA oversees key tasks related to renewable generation, such as managing compliance with renewable energy supply obligations through the RPS and certifying renewable energy equipment. KEA's role is largely focused on supporting and managing entities involved in renewable energy projects.

New and Renewable Energy Center (NREC): NREC oversees the domestic REC system**.** A division of KEA, NREC is tasked with issuing RECs and ensuring the integrity of the REC trading market. NREC operates a registry to manage RECs in South Korea, enabling accurate issuance and tracking of renewable energy generation and usage by producers and buyers. NREC amended the "Rules on Issuance and Trading Market Operation of RECs" on July 27, 2021, which became effective on August 2, 2021. These amended rules contain detailed standards for the opening of the REC Trading Market, transaction participants, participation methods, and procedures for voluntary markets.

Description of support mechanisms for renewables in the country:

South Korea has implemented several policies and financial support mechanisms to incentivize the construction and consumption of renewable energy. These include (i) a feed in tariff (FIT) which was operational from2001 to 2011, (ii) a renewable portfolio standard (RPS) which was enacted on 2012 and which currently remains in effect, (iii) a green premium scheme that remains in effect, and (iv) direct or partial financial support for self-consumption assets.

Feed in Tarif (Legacy): South Korea has implemented two FIT schemes. Its first FIT policy, introduced in 2001, aimed to promote new and renewable energy (NRE) by offering fixed, guaranteed prices for power generation from renewable sources such as wind, solar PV, and waste-to-energy systems over a 15-year contract duration. The FIT supported projects with an installed capacity of up to 3 MW for solar PV and up to 20 MW for other renewable sources, encouraging investment in small- to medium-scale renewable generation. The program was crucial in expanding waste, wind, and solar energy production during the 2000s. However, the FIT system was entirely phased out on December 31, 2011 as the 'Guidelines for the Reference Price of Electricity Generated by Alternative Energy', which had been the legal basis for the system, was abolished. For renewable assets installed and already subject to the reference price before December 31, 2011, the reference price is applied according to the Transitional Measures until the expiration of the period (15 years). The RECs of power generation facilities subject to the FIT system are owned by the state in accordance with Article 12-7 of the New and Renewable Energy Development, Utilization and Supply Promotion Act. The second FIT system introduced is a 'Small Solar South Korean type FIT system' that operates within the RPS system. While the general renewable energy projects have to apply the RPS bidding, small solar assets can enter into contracts with obligatory power generation operators at fixed prices announced without bidding. The purpose of

introducing the South Korean FIT system was to ensure the recovery of investment costs for small-scale solar

power plants of under 100 kW that are not price competitive. Accordingly, small-scale solar power plants that have entered the second FIT system, the South Korean FIT system, are being issued RECs under the national scheme and sold to obligatory power generation operators. Accordingly, electricity generated from renewable energy assets contracted under the small solar South Korean FIT system is issued with RECs in the same manner as general renewable energy assets and sold to the supplier. However, due to many cases of misuse, such as dividing solar power plants into smaller capacities, the South Korean FIT system was abolished in July 2023 by revising the 'Guidelines of Management and Operation for the New and Renewable Energy Supply Obligation System and the Fuel Blending Obligation System'.

Renewable Portfolio Standard (in effect): (NOTE: roles and responsibilities of the national REC system are described in the "Existing/Planned energy certificate systems section below.) Currently, the RPS is the main policy instrument for promoting renewable energy in South Korea. The RPS scheme requires generators (both state- and non-state-owned) which have combined power generating facilities of over 500MW to produce a minimum portion of their power using NRE. Compliance of mandated entities with the RPS is tracked using RECs issued under a domestic EAC scheme.

While the mandated minimum renewables share has changed several times since the inception of the RPS, the most recent figures (from South Korea's 10th Basic Plan of Long-Term Electricity Supply and Demand) featured a 13% renewable mandate for 2023, which is set to increase to 15% in 2026, and to 25% in 2030. Failure to meet the quota leads to administrative fines amounting to 1.5 times the average trading price of domestic RECs used for compliance with the RPS.

Under the RPS, power producers receive a domestic REC if it produces a certain amount of power from NRE facilities, which it is obligated to submit to NREC to prove it has fulfilled its mandatory supply ratio. South Korean REC issuance scheme is somewhat unique in that issuance is not necessarily conducted on a 1:1 MWh-REC ratio. RECs are issued to IPPs based on calculations using the NRE power (MWh) produced and supplied, multiplied by the REC weight given to the NRE type, which is set by the government**.** The REC weight was implemented to prevent excess investment in NRE types with low production unit costs, which can disrupt and deter the comprehensive use and diffusion of NREs.

To the knowledge of the authors, the REC issuance, tracking, transaction, and settlement procedures in the national RPS scheme are as follows:[2]

1. Renewable energy businesses sell electricity to KPX (over 1MW) or KEPCO (1MW or less)
2. Renewable energy businesses are issued RECs by NREC based on the amount of electricity sold.
3. KPX and KEPCO provide tracking data for issuing the REC to NREC every month.
4. Renewable energy businesses sell RECs issued by NREC to mandatory generation businesses through KPX. There are two ways in which renewable energy businesses sell RECs to mandatory generation businesses.
   a) **Long-term fixed-price contract**: As selling at a fixed price determined by NREC organized bidding, physical electricity is sold to KPX or KEPCO at system marginal price (SMP, at the hourly SMP price to KPX, at the monthly average SMP to KEPCO), and REC is sold to a long-term contracted mandatory generation company at the fixed price minus SMP
   b) **Trough the spot market**: If renewable energy businesses fail in NREC's bidding, physical electricity is sold to KPX or KEPCO, and the issued REC is sold to the mandatory generation business through the KPX spot market. At this time, the REC price changes according to market conditions.
5. Mandatory generation businesses submit purchased RECs to NREC to verify RPS compliance.

[2] The authors and the I-TRACK Foundation wish to clarify that the above text concerning the South Korean market should be used as indicative only, and in no way reflects a statement of facts or a representation of policy. Entities seeking to understand or participate in the national South Korean REC ecosystem should

reference only official materials on the market, and not the text above, which is provided as context only.

6. Mandatory generation businesses submit the purchased REC evidence to KPX (settlement agency) and are compensated for the cost of implementation.
7. KPX receives the total settlement of implementation costs (paid to mandatory generation businesses) from KEPCO[3], and KEPCO charges general electricity consumers with "climate environmental charges."
8. RECs are eventually transferred to KEPCO.

RPS RECs can be traded on the spot market, or through long-term auctions that combine both a REC price and an agreed SMP strike price. However, sometimes REC spot market prices are higher than 1.5 times the average trading price, which means paying penalties can be cheaper than buying RECs in the spot market. Anecdotal evidence suggests that market dynamics have, in some cases, discouraged obligated entities from participating in the REC market, and instead prefer paying penalties. In the voluntary market, either KPX or KEPCO tracks generation data for PPAs between generation facilities and corporate consumers. KPX traces generation volume in direct PPAs where KEPCO trace indirect PPAs.
However, in both cases, RECs are not currently issued for voluntary market PPAs.

Green Premium: The Green Premium Scheme in South Korea is a renewable electricity purchasing program operated by KEPCO. It allows consumers to pay a premium on their electricity bills to purchase electricity generated solely from renewable sources, with this electricity certified as renewable to ensure that it is not mixed with electricity from non-renewable sources. The price is generally set by the supply availability of green premiums with floor prices determined in advance. The proceeds are consolidated by the South Korea Energy Agency (KEA), which reinvests them in South Korea's renewable energy sector.[4] South Korea's green premium is currently the most widely used method by South Korean companies to source clean electricity, given that it is often the lowest cost and easiest to procure. However, the green premium has been criticized for its lack of additionality since KEPCO operates the Green Premium scheme based on the RECs that have already been supplied through the RPS.

Financial support for on-site renewables: The other primary support mechanism for renewables is direct and partial financial support from the government to self-consumption renewable energy facilities including rooftop solar. Articles 21 and 24 of the 'Regulations on Support for New and Renewable Energy Facilities' stipulate that subsidies may be provided for solar power facilities used for self-consumption installed in houses and buildings. Only self-consumption projects that also supply power to the grid can receive REC issuance under the national scheme, and in these cases, the only generation that receives RECs is for power that is sent to the grid. In other words, if the self-consumption generation facilities put excess power into the grid, this amount of power is recognized as a transaction that allows the project owner to claim ownership of the proceeds from the sale of power and the proceeds from the sale of domestic RECs. However, generation which is consumed on-site is not eligible for issuance of domestic RECs and may therefore become eligible I-REC(E) issuance.

In cases where self-consumption assets have been partially financed by the government, the government retains ownership of environmental attributes proportionate to the level of financial support it has provided to the asset (Article 18-7 of the Enforcement Decree of the New and Renewable Energy Development, Utilization and Supply Promotion Act). In such cases, asset owners have contractual definition of the portion of generation for which the government has title, as well as for the portion for which the project developer has title. Given that self-consumption assets are a core

[3] "Settlement of implementation cost" refers to the value of the REC that KPX already paid to mandatory generation businesses. In other words, this means that KPX compensates the 25 mandatory generation businesses for the amount they spent to fulfill their RPS obligations

[4] KEPCO transfers all income from the Green Premium scheme to NREC each month and KEA issues the Confirmation

of Renewable Energy Use to KEPCO every quarter. The funds collected through the Green Premium scheme are used by NREC to reinvest in renewable energy.

category for which I-REC(E) may be issued in South Korea, it will be essential for the Issuers to collect said documents at the point of asset registration or issuance, to ensure that the appropriate amount of RECs can be issued to the asset owner, government actor, or other relevant party.

Energy and Environmental Legislation Affecting Renewables:
The main sources of law and regulation in South Korea are the Renewable Energy Act, the Carbon Neutrality Act and the GHG Allocation Act, with the RPS and the K-ETS thereunder serving as two main regulatory frameworks. The renewable energy industry in South Korea is principally regulated by the Electricity Business Act (also known as the Electric Utility Act) and the Renewable Energy Act. The Renewable Energy Act outlines key matters concerning renewable energy projects.

In January 2023, the government passed its Tenth Electricity Plan, which aims to increase the renewable electricity share to 21.6% by 2030, up from around 6% in 2020. Under this structure, nuclear power would rise to 32.8% and coal would drop to 21.2%. South Korea's current share of renewables in its power mix is the lowest in the OECD. Compared to previous plans, the Tenth Electricity Plan aims for slower growth of renewable energy and instead prioritizes nuclear energy. The government plans to extend the lifetime of ten nuclear power plants by 2030.

The regulatory framework for new and renewable energy in South Korea is primarily governed by the RPS scheme under the Act on the Promotion of the Development, Use and Diffusion of New and Renewable Energy (the Renewable Energy Act). The regulatory framework for renewable energy is closely intertwined with other energy policies established under the Framework Act on Carbon Neutrality and Green Growth to Respond to the Climate Crisis (the Carbon Neutrality Act) the (South Korean) emission trading scheme (K-ETS), and the Act on the Allocation and Trading of Greenhouse Gas Emission Permits (the GHG Allocation Act)

KEA certifies new and renewable energy facilities that minimum levels of criteria to promote new and renewable energy facilities pursuant to article 13 of the Act on the Promotion of the Deployment, Use and Diffusion of New and Renewable Energy and article 21 of Framework Act on National Standards (Establishment of conformity assessment system).

Different institutions regulate different areas of law in South Korea, as MOTIE delegates various duties to other agencies. For example, South Korea Electric Power Corporation (KEPCO) manages REC matters, the New and Renewable Energy Centre is responsible for reviewing and issuing RECs to eligible companies, and local governments have the authority to issue licenses for the installation of renewable power plants located in their jurisdiction.

Existing/Planned energy certificate systems:
South Korea has a domestic REC system, which operates under the principles described below. The I-TRACK Foundation will only permit asset registration and issuance for projects that are prohibited from participating in the domestic South Korean REC system, to avoid risk of double counting. The following description is indicative only, and asset owners seeking to request I-REC(E) issuance will bear the responsibility of demonstrating that they are not registered in the domestic system, and that they are not eligible to register in the domestic system, prior to receiving I-REC(E) issuance.
Governance: The following documents set rules for governance, issuance, redemption, and use of the domestic REC system, as well as for the use of domestic REC with respect to compliance with the RPS:

- New and Renewable Energy Development, "Utilization and Supply Promotion Act" is the highest law for implementing the RPS. Article 12 defines entities subject to RPS obligations, fines for non-compliance, assets and procedures subject to REC issuance, and REC management agencies

- MOTIE Notification "Guidelines for the Management and Operation of the Renewable Energy Supply Obligation System and Fuel Mixing Obligation System": As detailed regulations necessary for the operation of the RPS system, the method of calculating the amount of mandatory renewable energy, the scope of work of NREC and KPX, and the weight of REC are defined.
- Renewable Energy Center Rules "Rules on Issuance of Renewable Energy Certificates and Operation of Trading Market" defines REC issuance and transaction procedures, and has guidelines for confirmation of assets subject to REC issuance and disposal procedures.

Registry and issuance procedures: NREC, an entity under KEA, owns and operates the domestic registry for registering assets, issuing and retiring RECs. NREC is responsible for asset registration and issuance within the domestic registry. Renewable generation facilities that wish to receive RECs under the domestic system must register power plant information such as the power plant name, type of power source, location, capacity, and commercial operation date with NREC. Generation facility owners sell electricity to KPX or KEPCO and apply for REC issuance to NREC. KPX and KEPCO are obligated to provide NREC with power transaction information with generation facilities every month. NREC issues RECs to applicants after verifying the power generation information received from KPX and KEPCO.

Who is allowed to buy and sell domestic RECs:
In the RPS system, South Korean renewable energy producers earn revenue by selling electricity to KEPCO (with a capacity of 1MW or below) or the KPX and earn additional income by trading domestic RECs with the other 25 large power generation companies with RPS mandates. Under South Korea's RPS system, REC sales are allowed to renewable energy generation operators, owners of renewable power facilities who sell excess power and are issued RECs, and companies that own RECs. In addition, large power generation companies with RPS obligations are allowed to purchase RECs. For large power generation companies that cannot meet their RPS quotas through their own RE generation, purchasing unbundled RECs is one of the ways to meet their annual RPS quotas. However, since 2022, companies have also been able to purchase RECs through NREC's trading system for their RE100 commitments.
Sellers of RECs:

- **Asset owners:** Renewable IPPs sell physical electricity to KPX or KEPCO, and based on this, they get REC from NREC and sell it to RPS obligated entities or voluntary renewable energy consumers.
- **Note on Brokers and traders:** REC resale is prohibited in the South Korean RPS system, and brokers and traders cannot participate in the RPS market.

Buyers of RECs:
RECs are purchased by suppliers obligated to meet RPS obligations and voluntary renewable energy users such as RE100 companies.

- **Obligated entities:** 25 large power generation businesses (as of December 2023) with a certain size (500MW) or larger power generation facilities fulfill their RPS obligations by purchasing REC from renewable energy generators or from the spot market. Both long-term contracts and in-kind markets are traded through KPX. In long-term contracts, the REC transaction price is the fixed price (SMP+REC) determined in the NREC bid minus the SMP.
- **Voluntary buyers:** Electricity consumers (companies/organizations), can purchase RECs that are not used to fulfill their RPS obligations through the NREC trading platform. Most REC transactions are private contracts with sellers, over-the-counter, and transfer ownership from the REC trading platform. Some buyers have spot transactions on the REC trading platform.

Asset eligibility:
All generation assets in South Korea whose generation and associated RECs can be used for RPS compliance are required to issue RECs only into the domestic REC system. However, domestic RECs are not issued for self-consumed renewable electricity such as rooftop assets.

Assets meeting the following criteria may use only the domestic REC system and are therefore ineligible to request issuance of I-REC(E):

1. Electricity is sold to or traded through KPX or KEPCO: Article 19 of the Regulations on the Issuance of Supply Certificates and the Operation of the Transaction Market stipulates that "application for issuance of supply certificates is for electricity traded through the South Korea Electric Power Corporation or the South Korea Electric Power Exchange." Article 6 of the 'Guidelines for the management and operation of the new and renewable energy supply obligation system and the fuel blending obligation system' defines the subject of REC issuance as new and renewable energy facilities of power generation business operators under Article 2 of the Electricity Business Act. There is an exception that a person who has installed a solar power facility issues REC when he or she trades the remaining electricity used by him or her among the electricity produced through the facility. Generation subject to this as follows:
2. Electricity produced in renewable energy facilities for power generation business and traded with KEPCO or KPX (Article 2 of the Electricity Business Act)
3. Electricity traded with KEPCO or KPX as surplus electricity from self-renewable energy facilities (Article 19 of the Enforcement Decree of the Renewable Energy Act)

Assets meeting the following criteria are (to the knowledge of the authors) prohibited from registering in the domestic REC system and therefore may be eligible to request issuance of I-REC(E):

Currently, the RPS system does not permit issuance of RECs for electricity produced and consumed on-site (Article 2, subparagraph 16 of the Electricity Business Act). As a result, assets that produce power that is entirely consumed on site may be eligible for I-REC(E) issuance. For assets used for self-consumption that export portions of total generation to the grid, the portion of exported electricity may be eligible for domestic REC issuance, and as a result, exported power will not be eligible for I-REC(E) issuance under current structures**.** However, self-consumption assets that export a portion of electricity to the grid and consume portions on-site may be eligible for I-REC(E) issuance, for electricity that is demonstrably consumed on-site.

Recognizing that for assets where the government has provided partial financial support, prevailing policy assigns corresponding proportional ownership to the government and the remainder to the asset owner, the Issuer in South Korea will determine how best to conduct issuance in compliance with domestic law and contract structures. Accordingly, in cases where the government has provided financial support for on-site generation, asset owners may be requested to provide documentation that evidences their full or partial ownership of the associated environmental attributes, which may be used as a basis for determining what volumes of RECs can be issued to actors in question. Issuance and review procedures may vary from time to time on such assets, to accommodate different contractual structures reviewed prior to asset registration or issuance.

Extent of engagement with government: CREF (the lead author of the present report) has been in communication with MOTIE's renewable energy policy unit to explore ways to introduce I-REC(E) to South Korea. MOTIE and other state actors have refrained from making public statements on the introduction of I-REC(E) in the country, either in the affirmative or negative. With no objection presented by government actors consulted, the I-TRACK Foundation and entities collaborating with it with respect to the onboarding process are not aware of any government objections or barriers to engaging in the market.

Further, to the knowledge of the authors of the report, there are no policy or regulatory documents that would prohibit the introduction of I-REC(E), provided that issuance does not double count or in any other way conflict with the existing domestic scheme. CREF will maintain contact with the national

government as well as the I-TRACK Foundation to support the alignment and credible operation of the two systems, each supporting different aspects of the renewable sector in South Korea.

Response from Government in relation to attribute tracking systems: Domestic officials have made no comment on the activities of the I-TRACK Foundation in South Korea, either in the affirmative or negative. The CREF and the Issuer will remain in touch with relevant parties and seek feedback regularly to support ongoing alignment. The Foundation expressly welcomes inputs from national actors and will be responsive to any inputs concerning the I-TRACK Foundation's engagement.
Demand-side market potential or strategic nature of market development: Access to renewable electricity products in South Korea is severely limited, with the country often being referenced by RE100 buyer as one of the most challenging procurement markets. While the domestic market solves for large-scale assets, there is currently no way for rooftop and self-consumption assets to be tracked and sold into the market. The authors note that there are gigawatts of rooftop solar assets, for which REC issuance is not being conducted. Permitting the registration of these assets will enable corporate entities to access RECs and deliver financial support to scale up rooftop installations.
Analysis of political disruptions or market risks: South Korea is recognized globally as a robust economy with solid government footing and a well-structured legal system. As such, political risks are minimal. The presence of a domestic REC scheme poses low to moderate risks of double counting, requiring close coordination with domestic entities, including the Local Issuer (to be appointed following country approval), KEPCO, KEA, and MOTIE. The anticipated Issuer and its network maintain beneficial relationships with each of these parties and will act as a key liaison between the I-TRACK Foundation and domestic actors to ensure that no double counting takes place, and that the operation of I-REC(e) systems in the country comply with domestic requirements while preserving global credibility and trust.
Analysis of regulatory risks including linkages with carbon markets and support systems: Primary risks surround double counting against the domestic REC system. Issuance procedures for I-REC(E) are designed specifically to avoid such risks. Further, while CDM has issued carbon credits in South Korea in the past, few (if any) renewable generation devices in South Korea continue to issue carbon credits through CDM. Contractual claims will be required of Registrants, indicating that their use of I-REC(E) in the country does not double count against the domestic REC system, CDM, or any other EAC or carbon credit system. The details for the avoidance of double counting/ issuing I-REC(E) against domestic RECs will reference the "Rules for issuing RECs and operating the trading market", which provides specifications of eligibility for the national scheme and can therefore support the identification of asset types not permitted to register with I-REC(E).[5] Projects that do not meet the national scheme requirements, but which do meet I-REC(E) issuance criteria may be eligible to issue I-REC(E)s. The organization anticipated to act as a local Issuer for South Korea is aware of these rules, able to check the registration status of assets in the domestic scheme and will help ensure that double issuance does not take place. This structure will allow the issuance of I-REC(E) for rooftop solar and potentially other self-consumption projects, either for self-consumption or for sale into the market under standard issuance and trade conditions compliant with the Tracking Standard and Code for Electricity. For self-consumption devices eligible for I-REC(E) issuance that have also received financial support from the government, Registrants may be required to submit documentation establishing ownership or split ownership. In such cases, Registrants or asset owners will be solely responsible for ensuring that

[5] Reference materials can be accessed at this link (as of February 2025):

https://www.knrec.or.kr/biz/faq/faq_view.do?depth_1=A030000&no=620&utm

relevant transfer of ownership is delivered to the government proportionate to the amount of financial support provided to devices, in line with prevailing contracts, policies, or laws.
Mechanisms in place to support the reliable verification and issuance of I-REC(E): Most production units are connected to the national grid and there is public data provided by the grid operator—KEPCO or KPX determines the amount generated per unit. Renewable energy is also monitored by KEPCO or KPX, which verifies the amount of renewable energy generated. Once generated, renewable energy is integrated into KEPCO's electricity grid network. RECs are issued by NREC, which produces devices to avoid double issuance. NREC also attaches unique identification equipment to every production device to avoid double issuance. Self-consumption in South Korea is usually medium or small scale (100kW to 1MW for corporate use, 3kW to 6kW for residential use) and connected to BTM. Installed meters are for net metering purposes only, no electricity meter is used. Electricity produced from rooftop solar facilities is traceable by installing additional electricity meters or by collecting data from inverters. However, the price of installing a remote terminal unit is around 400 USD. The introduction of Verification Label functionality into the I-TRACK Foundation's I-REC(E) ecosystem during 2024 will further support reliable verification procedures for small assets.
Local organizations of importance and their opinion on local I-REC market development: CREF is the primary domestic actor working to introduce I-REC(e) to South Korea. The organization plays a lead coordinating role between public and private sector entities in the country and is knowledgeable of both domestic and international REC markets and energy policy. CREF is confident that if I-REC(e) can be issued for such production facilities, local electricity generators will use the international instrument to support reporting to CDP and similar actors in support of transparent and internationally credible reporting. CREF believes such a view is shared by the South Korean CDP Committee and South Korean RE100 member companies and is in communication with the South Korean Energy Agency to support EAC system alignment and credible reporting.

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