

Alternative Energy Market Update – Q1'22

Winter 2022

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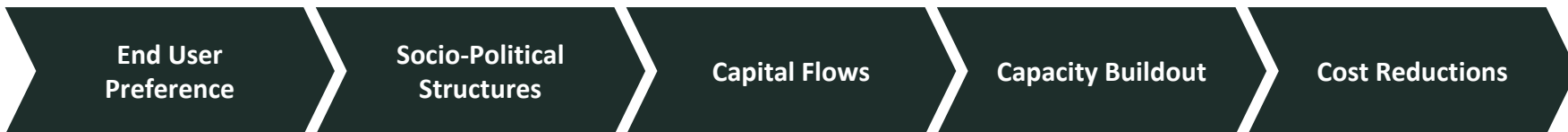
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Alternative Energy Trends | Conceptual Framework

The dynamic growth in Alternative Energy and Cleantech is underpinned by a generational trend of individuals' increasing preference for cleaner energy



Public support for cleaner energy and fighting climate change is at an all time high

- 60% of Americans are worried climate change will negatively impact them in their lifetimes¹
- More than 75% of Americans say they are willing to make changes to reduce the effects of climate change¹
- The UNDP's Peoples' Climate Vote revealed that of the U.S. population that believes climate change is a threat, 65% of Americans support clean energy as the best solution²

As demand preferences change, socio-political structures adapt

- ESG trends
- Emerging markets for Environmental Attributes (e.g. RECs, LCFS, and Carbon Credits)
- Federal Tax incentives (e.g. ITC/PTC, 45Q)
- Biden Infrastructure and Build Back Better plans
- Federal government has valued the social cost of carbon at \$51 per ton³

As socio-political structures change, the money starts to flow in that direction

- Investors are increasingly seeking to deploy capital into companies with a strong focus on ESG and related policies
- Global sustainable fund assets expanded by 9% in the fourth quarter to \$2.74tn at the end of December 2021⁴
- Inflows grew as well with investors allocating \$142bn into sustainable funds globally, representing a 12% increase from Q3'2021⁴

As capital flows increase and chase opportunities, capacity build-out ramps and supply chains scale

- S&P Capital IQ reports that the U.S. added 28 GW of new generating capacity to the grid in 2021. Wind accounted for 41% of new capacity while solar accounted for 31%⁵
- The American Gas Foundation predicts that RNG from LFG production could increase over 200% by 2040⁶
- Globally, green H₂ capacity has grown to 385 MW, with projections of over 151 GW by 2030⁷

As supply chains scale, costs ratchet down, and once-emerging technologies displace traditional forms of energy

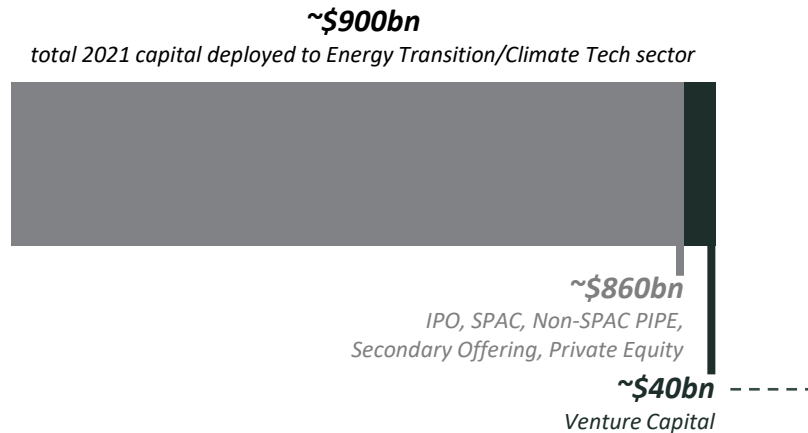
- Being the low-cost producer is the name of the game in Energy
- Wind and solar costs now outcompete traditional thermal power generation on cost, even on an unsubsidized basis⁸
- Renewable energy capacity additions expected to dwarf traditional sources in 2021 and 2022, accounting for 90% of new power capacity globally⁹

¹ Pew Research Center; ² United Nations Development Programme; ³ Whitehouse; ⁴ Morningstar; ⁵ IEEFA; ⁶ American Gas Foundation; ⁷ IEA Hydrogen Projects Database; ⁸ Lazard; ⁹ IIEA Renewable Energy Market Update 2021

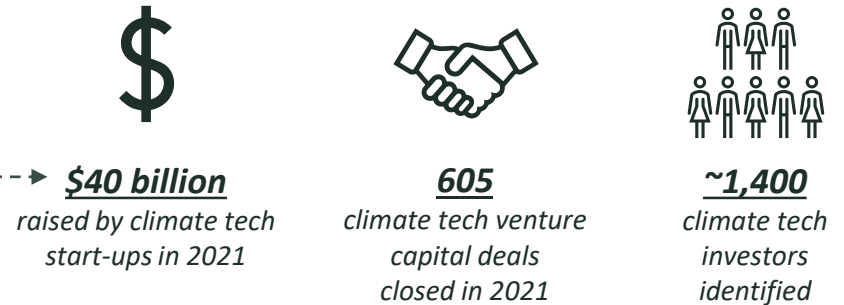
Alternative Energy Trends | Technical Backdrop for Early-Stage Investment

Despite ongoing development challenges and Build Back Better regulatory uncertainty, investment appetite remains strong

Energy Transition/Climate Tech Capital Deployment

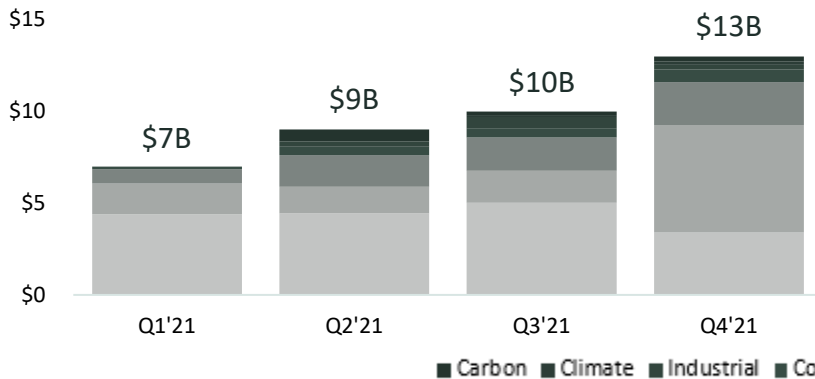


2021 Venture Capital Investment Overview



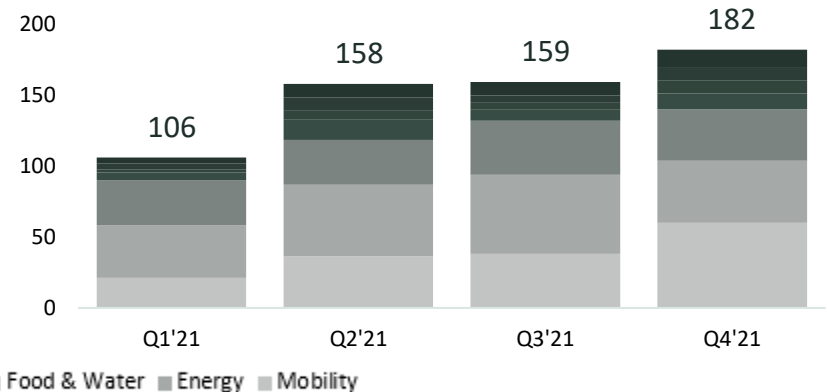
2021 Venture Capital Funding by Sector

~\$23bn deployed in H2'21 reflects 100% y-o-y growth over the same period in 2020



2021 Venture Capital Deals by Sector

341 deals closed in H2'21 reflects 65% y-o-y growth over the same period in 2020



Source: Climate Tech VC Substack; BloombergNEF

Alternative Energy | Public Market Overview

Company	Ticker	Price 2/14/2022	Market Cap (\$mm)	Enterprise Value (\$mm)	YTD Total Returns (%)	Valuation		Debt / Total Cap (%)	Credit 2021 Net Debt / EBITDA (x)	S&P Credit Rating
						2022E EV / EBITDA (x)	2023P EV / EBITDA (x)			
Alternative Energy										
Array Technologies	ARRY	\$8.89	\$1,334	\$1,766	(43.3%)	9.2x	6.5x	56.3%	4.0x	B+
Brookfield Renewable Corporation	BEPC	34.56	12,503	36,163	(5.4%)	16.4x	16.1x	48.7%	10.0x	A-
First Solar	FSLR	68.23	7,255	5,799	(21.7%)	11.4x	7.3x	8.0%	0.0x	NA
Hannon Armstrong	HASI	39.81	3,364	5,509	(25.1%)	39.2x	36.1x	64.4%	4.0x	BB+
Ormat Technologies	ORA	66.97	3,754	5,542	(15.5%)	12.0x	10.6x	43.2%	4.0x	NA
Sunnova Energy International	NOVA	17.14	1,924	4,981	(38.6%)	39.7x	24.0x	61.7%	34.9x	B-
SunPower Corporation	SPWR	15.83	2,738	2,740	(24.1%)	22.3x	14.6x	63.0%	1.0x	NA
Sunrun	RUN	22.60	4,678	11,966	(34.1%)	NA	242.6x	42.7%	0.0x	NA
Cleantech										
Bloom Energy Corporation	BE	\$17.51	\$3,090	\$4,068	(20.2%)	74.3x	25.6x	86.8%	23.1x	NA
Enphase Energy	ENPH	143.93	19,277	19,314	(21.3%)	37.1x	27.4x	71.0%	0.0x	NA
FuelCell Energy	FCEL	4.62	1,694	1,423	(11.2%)	NA	NA	43.4%	0.0x	NA
Plug Power	PLUG	21.47	12,374	8,832	(23.9%)	NA	58.4x	27.7%	0.0x	NA
SolarEdge Technologies	SEDG	249.22	13,089	12,611	(11.2%)	25.3x	19.3x	38.0%	0.0x	NA
Tesla	TSLA	875.76	905,105	897,696	(17.1%)	44.0x	33.7x	22.0%	0.0x	BB+
Solar / Wind IPP										
EDF	EDF	\$9.20	\$29,776	\$79,842	(21.2%)	NA	NA	54.3%	2.6x	BBB+
EDP Renováveis	EDPR	19.22	18,458	24,611	(22.4%)	NA	NA	35.9%	2.2x	BBB
NextEra Energy Partners	NEP	71.83	6,025	20,008	(14.1%)	11.4x	10.5x	34.8%	3.0x	BB
Ørsted	ORSTED	99.56	41,833	48,738	(21.5%)	12.4x	13.1x	40.7%	1.0x	BBB+
Alternative Fuels / RNG										
Ameresco	AMRC	\$52.46	\$2,705	\$3,635	(35.6%)	18.6x	17.4x	62.2%	NA	NA
Archaea	LFG	15.96	2,004	3,368	(12.7%)	23.5x	13.6x	31.2%	0.0x	NA
Clean Energy Fuels Corp.	CLNE	6.45	1,439	1,262	5.2%	21.3x	12.2x	18.1%	0.0x	NA
Darling Ingredients	DAR	64.71	10,471	12,011	(6.6%)	7.7x	7.2x	35.9%	1.0x	BB+
Montauk Renewables	MNTK	10.41	1,468	1,507	1.6%	21.3x	15.2x	30.1%	0.0x	NA
Neste	NESTE	42.49	32,630	32,681	(13.3%)	13.2x	10.7x	20.1%	0.1x	NA
ArLight Clean Transition Corp. II	ACTD	9.89	1,958	1,472	(0.9%)	20.2x	6.2x	NA	0.0x	NA
Electric Vehicle Infrastructure										
ChargePoint Holdings	CHPT	\$13.38	\$4,429	\$4,091	(29.8%)	NA	NA	44.3%	0.0x	NA
Evgo, Inc	EVGO	9.74	669	1,745	(2.0%)	NA	NA	30.4%	0.0x	NA
TPG Pace Beneficial Finance (EVBox)	TPGY	9.85	431	435	0.4%	NA	NA	NA	0.0x	NA
Volta	VLTA	5.17	839	619	(29.6%)	NA	NA	71.0%	0.0x	NA
Battery Storage										
Enovix Corporation	ENVX	\$14.94	\$2,170	\$1,840	(45.2%)	NA	NA	2.8%	0.0x	NA
Eos Energy Enterprises	EOSE	3.07	165	134	(59.2%)	NA	18.7x	1.1%	0.0x	NA
Fluence	FLNC	12.74	690	583	(64.2%)	NA	NA	NA	NA	NA
Li-Cycle	LICY	7.29	1,231	765	(26.8%)	NA	17.1x	23.1%	0.0x	NA
QuantumScape Corporation	QS	15.82	6,776	5,302	(28.7%)	NA	NA	3.4%	0.0x	NA
Stem Inc.	STEM	10.53	1,612	1,140	(44.5%)	52.9x	13.4x	14.2%	0.0x	NA

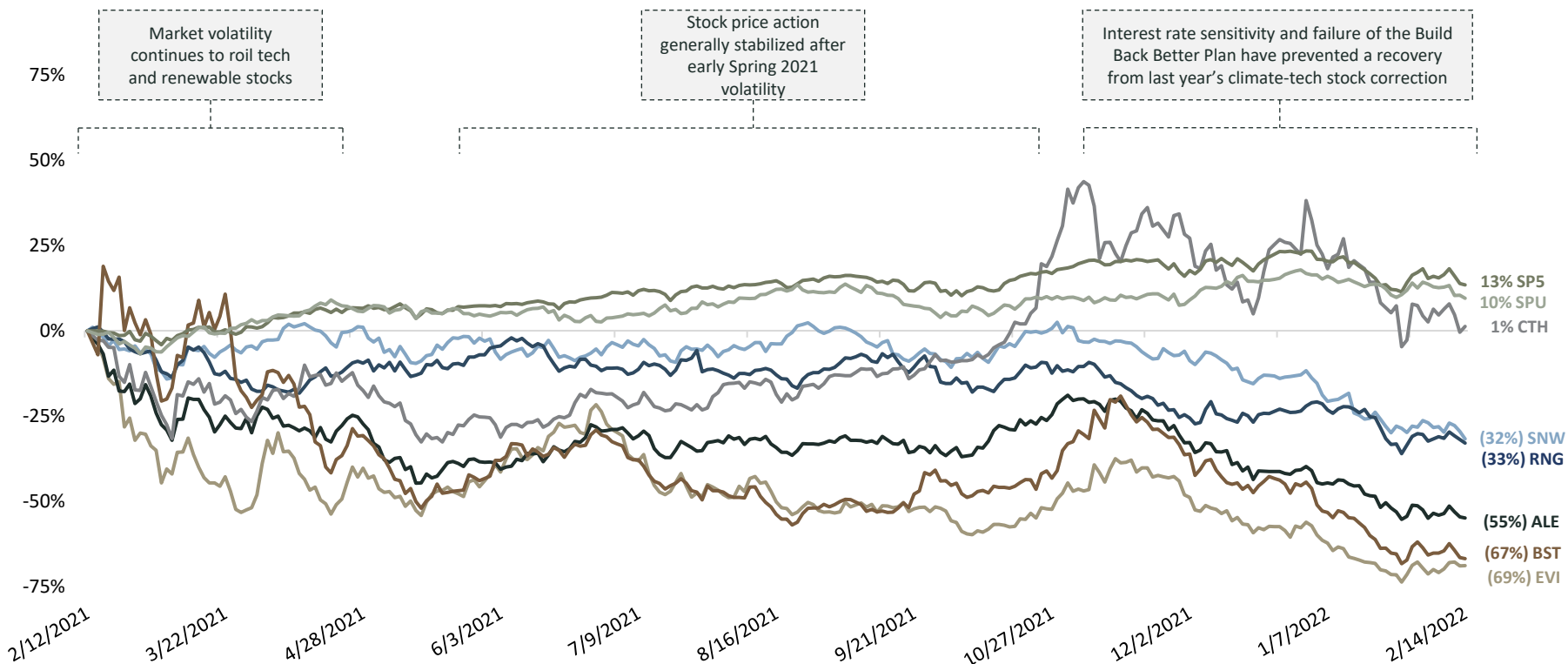
Note: Prices as of 2/14/2022; Fluence IPO took place on 10/28/2021; OPAL Fuels will merge with ArLight Clean Transition Corp. II in Q2'22 and will trade under the ticker "OPL" (Market Capitalization and Enterprise Value are representative of SPAC transaction sources and uses and have been updated based on current share price)

Source: S&P CapIQ Pro

Alternative Energy | Stock Market Performance

Alternative Energy (ALE)		Cleantech (CTH)		Solar/Wind (SNW)		Renewable Fuels/RNG (RNG)		EV Infrastructure (EVI)		Battery Storage (BST)		S&P Utilities Index (SPU)	S&P 500 (SP5)
ARRY	ORA	BE	PLUG	EDF	NEP	AMRC	MNTK	CHPT	TPGY	ENVX	LICY		
BEPC	NOVA	ENPH	SEDG	EDPR	ORSTED	LFG	NESTE	EVGO	VLTA	EOSE	QS		
FSLR	SPWR	FCEL	TSLA			CLNE	ACTD			FLNC	STEM		
HASI	RUN					DAR							

Indices Total Return (LTM)



Note: Prices as of 2/14/2022

Source: S&P CapIQ Pro

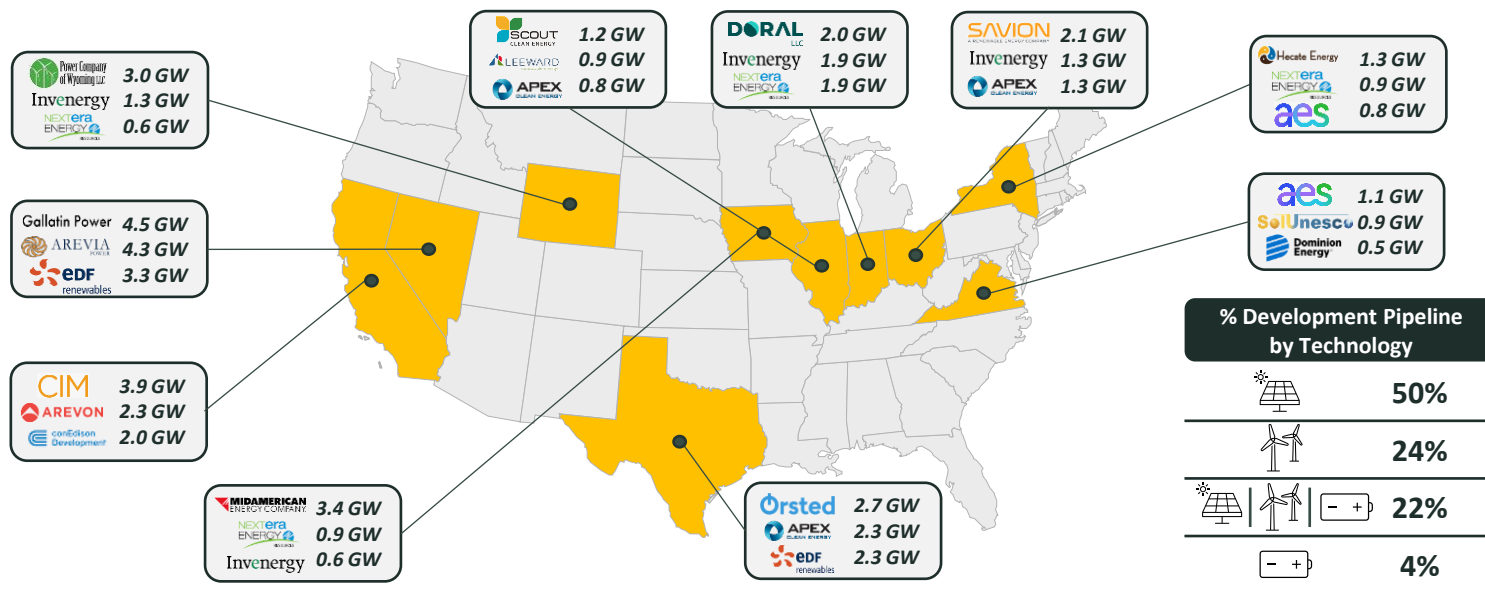
Alternative Energy | U.S. Solar, Wind, & Storage Landscape

Development bottlenecks suggest this year's new capacity additions could be similar to 2021, as early-stage projects make up nearly 70% of the 63 GW pipeline targeting a 2022 in-service date

Land/Permitting	Interconnection	Offtake	Supply Chain	EPC	Financing
Local opposition to new development resulting in moratoriums and higher permitting hurdles in many markets	Queue reform in MISO and PJM create major delays that put premium value on advanced projects. Cost allocation and sharing still uncertain	Widespread PPA renegotiations open window of opportunity for RFP finalists. Current prices crowding out most corporate buyers	Input prices are experiencing inflationary pressure. Transportation constraints are impacting shipping timelines and costs	Labor market remains tight due to shortage of qualified EPC firms with adequate financial-backing to execute large project pipelines	Abundance of tax equity, debt, and sponsor equity capital, particularly with lack of shovel-ready projects and potential tax reform

Largest U.S. Development Pipelines By Market¹





















Top 3 pipelines in each of the top 10 markets, ranked by pre-operational generating capacity²



Source: ¹ Project pipeline data sourced from NPM Market Data. ² Pipeline capacity data sourced from NPM curated intelligence and publicly available sources

Alternative Energy | Utility-Scale Platform Acquisitions

Many of the largest independent U.S. developers have recently announced major platform transactions, securing access to development capital and shifting to an IPP model

Date	Investor	Developer	Commentary
Jan'22			Brookfield Renewable acquired Virginia-based solar developer, Urban Grid, for \$650mm. The deal is expected to nearly triple Brookfield's capacity in the U.S. to around 31 GW
Dec'21			AES acquired Pennsylvania-based solar developer, Community Energy, adding nearly 10 GW of early-to late-stage development assets to its project pipeline
Dec'21			Shell New Energies is purchasing a 100% equity interest in Savion, complementing its interest in Silicon Ranch with 18 GW of additional solar + storage project pipeline in the U.S.
Oct'21			Antin Infrastructure Partners agreed to acquire majority stake in Origis Energy. Additional capital will support build out of contracted pipeline
Sept'21			Ares Management to acquire a majority stake in Apex. Transaction will provide Apex with additional equity growth capital to transition to pure-play IPP
Jul'21			Enlight to acquire solar + storage developer Clenera for \$400mm+; deal will expand Enlight's storage portfolio to 7.5 GWh across 11 countries
July'21			EQT closed the acquisition of solar + storage developer Cypress Creek, who operates 1.6 GW in assets, after years of recapitalization efforts
June'21			BP closed the acquisition of 9 GW solar project pipeline from 7X.energy for \$220mm
May'21			Spanish oil company Repsol entered U.S. renewables market through 40% interest investment in Hecate Energy, bolstering its growing solar + storage platform
May'21			Dominion acquired utility-scale solar developer with 2.5 GW of solar under development for \$46mm to complement internal development capabilities












Alternative Energy | C&I Solar

C&I solar is one of the most attractive asset classes for institutional investors. Recent activity highlights focus on establishing pipeline for deploying long-term equity capital

Developer Considerations

Successful developers leverage local presence and market insight to secure repeat business

- Execution certainty is paramount to success, which comes from industry expertise, sophisticated financial structuring capabilities, in-house EPC execution capabilities and technical know-how to build and manage large solar portfolios
- Competitive processes offer scale and high-quality offtake, but heavy competition drives pricing to the bottom, especially in initial transactions
- Bilateral transactions based on long-term relationships and trust offer better project economics and more efficient transactions

Date	Investor	Developer	Amount	Commentary
Feb'22	 TotalEnergies	SUNPOWER®	\$310 million	TotalEnergies signed a definitive agreement to purchase SunPower's Commercial & Industrial Solutions (CIS) business for \$250 million, including \$60 million of earn-out subject to regulatory evolution
Dec'21	 Luminace <small>By Brookfield Renewable</small>	 SOLOPS	N/A	Brookfield Renewable-backed Luminace signed an agreement with Solops to co-develop up to 300 MW of DG projects over the next 3 years
Nov'21	 OMERS	 NAVISUN	N/A	OMERS Infrastructure struck a deal to acquire Navisun from funds managed by Ares in a deal set to close in Q1'22
Sep'21	 CATALYZE	 SOL ALLIANCE	N/A	EnCap-backed Catalyze acquired Sol Alliance, a 100% renewable focused solar sales, development, and EPC firm with an 80 MW pipeline
Jul'21	 CBRE	 ALTUS POWER	\$1.58 billion	Altus Power announced a SPAC combination with CBRE Acquisition Holdings that valued Altus at \$1.58 billion
Mar'21	 edp renewables	 C2	\$119 million	EDPR acquired an 85% stake, corresponding to an EV of \$119 million, in C2 Omega, which holds a DG solar portfolio with 89MW of operating capacity

Alternative Energy | Battery Storage












Battery storage platform investments accelerated in the second half of '21 and are expected to continue this year

Storage development platforms are in high demand, where valuations are driven by recent and expected growth of the sector and expanded use cases across markets

Power markets have been slow to keep pace with evolution of the market, but clearer economic price signals must emerge to validate recent investment activity

To date, nearly all market demand for storage projects has been with the use case of load shifting, peak shaving, or (to a lesser extent) grid regulation and as a transmission asset

Recent Transactions

Date	Buyer	Target	Amount	Type	Commentary
Dec'21	 GLOBAL INFRASTRUCTURE PARTNERS	 ABLE GRID	N/A	M&A	Global Infrastructure Partners portfolio company Eolian has bought out joint venture partner Able Grid Energy Solutions' interest in storage project portfolio exceeding 10 GW
Nov'21	 quinbrook infrastructure PARTNERS	 HABITAT ENERGY	N/A	M&A	Quinbrook Infrastructure Partners acquired UK-based battery storage and optimization and trading platform Habitat Energy Limited that will focus on the ERCOT market
Nov'21	N/A	 FLUENCE A Siemens and AES Company	\$998m	IPO	Fluence, a global provider of energy storage products and services and digital applications for renewables and storage raised total proceeds of \$998m from its IPO in October
Nov'21	 APOLLO	 BROAD REACH POWER	N/A	M&A	Apollo agreed to acquire a 50% stake in Houston-based Broad Reach Power from Encap. EnCap and its co-investment partners will retain a 50% interest
Sept'21	 Novus Capital	 ENERGY VAULT Enabling a Renewable World	\$1.6B	SPAC	Gravity-based storage firm Energy Vault announced that it will go public through a merger with special purpose acquisition company (SPAC) Novus Capital Corporation II
Sept'21	 SK E&S	 KEY CAPTURE ENERGY	N/A	M&A	Key Capture Energy, a developer, owner and operator of energy storage projects in the U.S., announced that it will be acquired by SK E&S Co., Ltd.

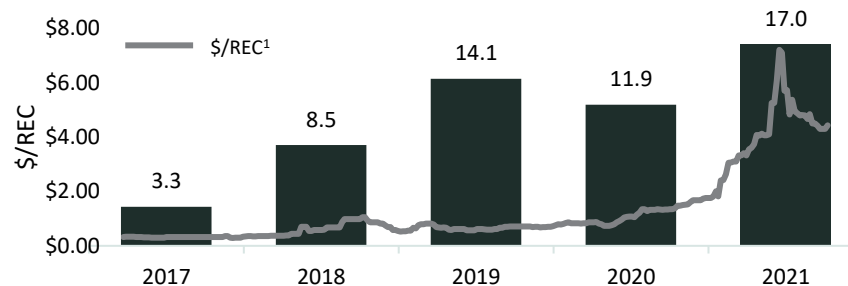
Alternative Energy | Corporate PPA Market Overview

Corporate PPA signings hit a new record, despite inflationary pressures and interconnection constraints

Inflationary Pressures

- Inflation conversations have moved from commodity price escalations to Trans-Pacific shipping costs, which are adding 5-7 cents per Watt in EPC costs
- Developers continue to face inflationary pressures including:
 - **Polysilicon**, a major component of most solar panels, prices have increased 4x since 2020
 - This is in addition to an already tough price environment for developers dealing with higher **steel, copper, and labor** prices
- **Interconnection reform** in PJM, the nation's largest grid, continues to constrain the supply of contract-ready projects. More recently, in an attempt to alleviate the logjam of renewable projects, PJM implemented \$4,000/MW readiness deposits for all projects currently in the queue. Additionally, projects with more than \$5 million of shared network upgrades will be eliminated from fast-track approval and placed into a transition cycle study. Longer and more expensive interconnection processes will serve to consolidate the field of developers, furthering the sellers' market trend we've been seeing for the past two years
- **Corporate commitment** to adopt 100% renewable energy continues to climb with over 340 companies joining the RE100 since its inception in 2014. 65 companies joined in 2021. Already in 2022, big names, including Pfizer and Nokia have joined. As investors continue to press corporate board commitment to ESG policies, more of the world's largest corporations are expected to target 100% renewable energy

Annual Corporate PPAs (GW)



2021 PPA signings bounced nicely off 2020 weakness, setting a new record for contracted Gigawatts

Q4 2021 Noteworthy Corporate PPA Deals

	Seller	Size	Fuel Source	Location
	Vesper	310 MW	Solar	ERCOT
	DESRI	160 MW	Solar	PJM
	Duke Energy	180 MW	Wind	MISO
	Constellation	Portion of 200 MW	Solar	ERCOT
	Clearway	80 MW	Solar	MISO
	Pine Gate	80 MW	Solar	PJM
	Ørsted	55 MW	Solar	ERCOT

Source: ¹S&P Market Intelligence, BloombergNEF, RE100, Greenbiz, Company Press Releases

Alternative Energy | Carbon Capture

Carbon Capture Sequestration projects are poised to make significant headway in 2022

Emerging Development Platforms/Technologies

- **Feb. 2022:** [EQT](#), [Equinor](#), [GE](#), [Marathon](#), [Mitsubishi](#), [Shell](#), and [US Steel](#) formed an alliance to develop a carbon capture, utilization, storage and hydrogen production and utilization hub in Ohio, Pennsylvania, and West Virginia's Northern Appalachian Region
- **Feb. 2022:** [Verdax](#) announced it received \$80mm in committed capital from a syndicate including Breakthrough Energy Ventures, Prelude Ventures and Lowercarbon Capital. Verdax will use the funds to develop and deploy its electrochemical carbon capture technology that had its core technology developed at MIT
- **Dec. 2021:** [Carbon America](#) closed a \$30mm Series A funding round to launch the carbon capture industry's first vertically integrated super developer. Participating investors included the Canada Pension Plan Investment Board, ArcTern Ventures, Energy Impact Partners
- **Dec. 2021:** [Elysian Carbon Management](#), an integrated carbon capture and storage solutions provider, received a \$350mm capital commitment from Encap Flatrock Midstream to develop, build, and operate carbon storage sites

Noteworthy 2021 Events



40+ new CCS Projects announced since 2020



U.S. Energy Act passed authorizing \$6bn for CCS research, development, and demonstration



Two large-scale CCS networks with biorefineries were announced in the U.S. Midwest, facilitated by low CO₂ capture costs and access to 45Q and LCFS incentives



Selected CCS Projects

Developer	Geography	Project
	Gulf	<ul style="list-style-type: none"> • ~\$4.5 billion blue hydrogen production complex • Air Products has leased over 120,000 acres for sequestration
	Midwest	<ul style="list-style-type: none"> • Comprehensive carbon capture, transport, and sequestration network across the Midwest • Valero Energy Corporation to anchor the facility's offtake
	Midwest	<ul style="list-style-type: none"> • ~\$4.5 billion comprehensive carbon capture, transport, and sequestration network across the Midwest • The project is expected to capture up to 12 million tons of CO₂ emissions each year, equivalent to removing 2.6 million cars from roads annually
	Gulf	<ul style="list-style-type: none"> • Talos to partner with TechnipFMC, Storegga, and Carbonvert to develop offshore carbon capture, transport, and sequestration projects along the U.S. Gulf Coast
	Midwest	<ul style="list-style-type: none"> • Expansion of carbon capture system at existing gas processing plant in North Dakota • The project is expected to capture as much as 70% of the carbon dioxide generated by the facility
	Mid-Atlantic	<ul style="list-style-type: none"> • ~\$400 million natural gas processing facility with carbon capture and sequestration to be built in central PA
	Gulf	<ul style="list-style-type: none"> • ~\$9.2 billion carbon negative renewable fuel complex to be built near Baton Rouge, LA • The complex's first phase will reach its final investment decision this year
	Gulf	<ul style="list-style-type: none"> • ~\$100 billion proposed carbon capture, transport, and sequestration complex in the Houston Ship Channel
	Gulf	<ul style="list-style-type: none"> • Oxy Low Carbon Ventures has agreed to offtake, transport, and sequester CO₂ from an existing LNG production facility in development by NextDecade in the Port of Brownsville, TX
Other key players		

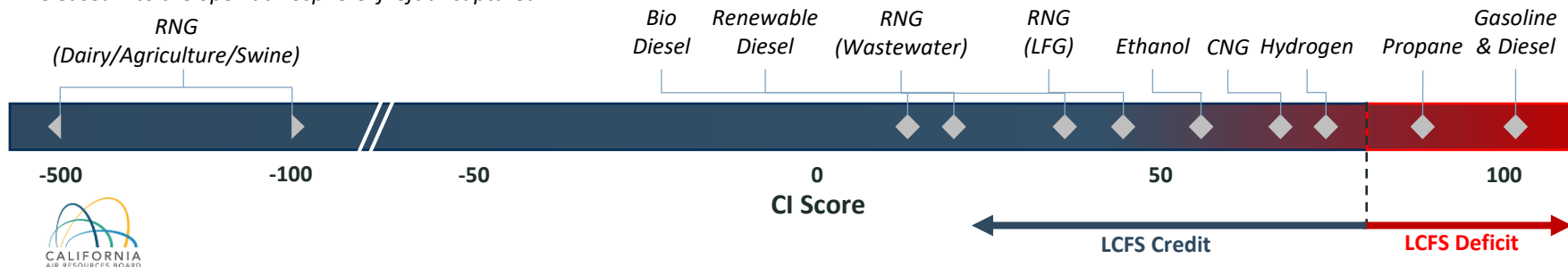
Source: Company data, Global CCS Institute

Alternative Energy | Renewable Fuels & Low Carbon Fuel Standard (LCFS)

Low Carbon Fuel Standards (LCFS) pricing has dropped to the \$150 / metric ton area

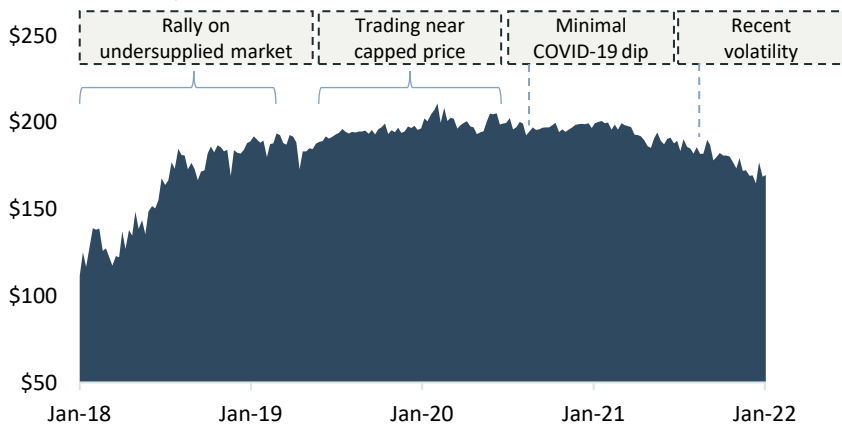
Carbon Intensity Scoring

Fuel sources with a CI score below the par threshold generate LCFS credits. RNG projects with the least carbon-intensive feedstock and production processes generate the most valuable LCFS credit. RNG not only creates a usable biofuel alternative, but also eliminates GHG emissions created by degrading waste released into the open atmosphere if left uncaptured



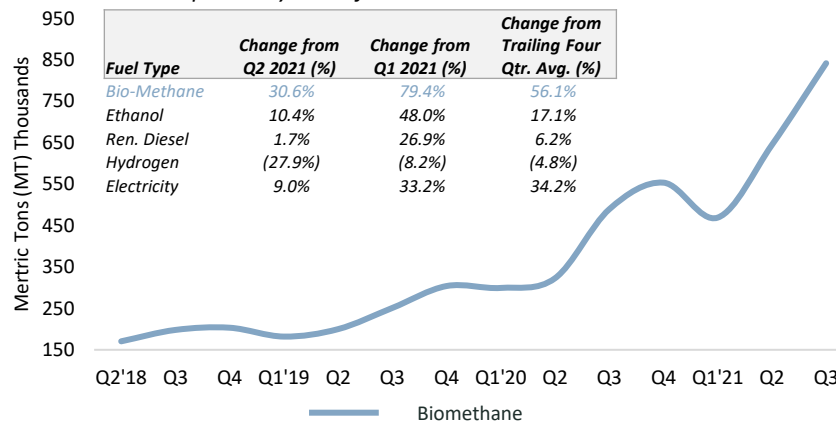
LCFS Credit Weekly Non-Zero Average Price (\$/Credit)

The average of Type 1 and Type 2 LCFS transfers has traded near its maximum for years, but recent volatility has caused prices for Type 1 transfers to drop down as low as \$146



LCFS Credits (MT) by Fuel Type























Biogas/RNG has more than quadrupled its market presence as a low carbon fuel in the LCFS market since 2019, and has led to another quarterly surplus of LCFS bank credit as reported by CARB for Q3'21



Source: California Air Resources Board (CARB), SREC Trade Clean Fuels Market Update







































Alternative Energy | RNG Recent Announcements & Transactions

Increasing focus on methane has spurred significant strategic activity in the Renewable Natural Gas space

Date	Counterparties	Deal Type	Geography	Commentary	
Jan'22	 ARCHAEA ENERGY	 FORTIS BC	Strategic Agreement	U.S.	Archaea Energy and FortisBC Energy entered into a new 20-year RNG supply agreement
Jan'22	 MACQUARIE	 aerogy	Platform Launch	U.S.	Macquarie Capital announced the launch of Aerogy, a platform that develops, operates and invests in RNG infrastructure projects
Dec'21	 AstraZeneca	 futurebiogas	Corporate Investment	United Kingdom	Astrazeneca and Future Biogas will build a biomethane facility in the UK that will provide a capacity of 125 GWh of biomethane
Dec'21	 FIERA INFRASTRUCTURE	 cube DISTRICT ENERGY	M&A	U.S.	Fiera Infrastructure announced that it acquired Cube District Energy, a U.S. landfill gas-to-energy platform
Dec'21	 OPAL FUELS	 GFL RENEWABLES	Strategic Agreement	U.S.	OPAL Fuels announced a 50/50 joint venture with GFL Renewables to develop new RNG production facilities in the US
Dec'21	 Amp Americas	 GENERATE	M&A	U.S.	AMP Americas expanded its partnership with Generate Capital, consolidating Generate's Indiana RNG assets into its dairy RNG portfolio
Nov'21	 irradiant partners	 BIOENERGY DEVCO	Platform Investment	U.S.	Bioenergy Devco has secured \$100mm in financing from Irradiant Partners to support the development of anaerobic digesters
Nov'21	 NW Natural HOLDINGS	 EDL	Strategic Agreement	Northwest U.S.	20-year offtake agreement coupled with a \$50mm investment into the development of two landfill projects
Oct'21	 Vitol	 WAGA ENERGY	Strategic Agreement	France & Netherlands	Vitol has agreed to buy RNG from, as well as acquire a minority stake in, Waga Energy
Oct'21	 bp	 ONBOARD DYNAMICS	M&A	U.S.	BP Energy Partners has signed an agreement for an equity investment in Onboard Dynamics to scale products and services
Sep'21	 VISION RIDGE PARTNERS	 Vision RNG	Platform Investment	U.S.	Vision Ridge has announced a \$100mm commitment to establish and build out Vision RNG, an LFG-RNG developer and operator

Source: Company data, S&P Market Intelligence, GTM/WoodMac, New Project Media

Alternative Energy | Hydrogen - Noteworthy Announcements

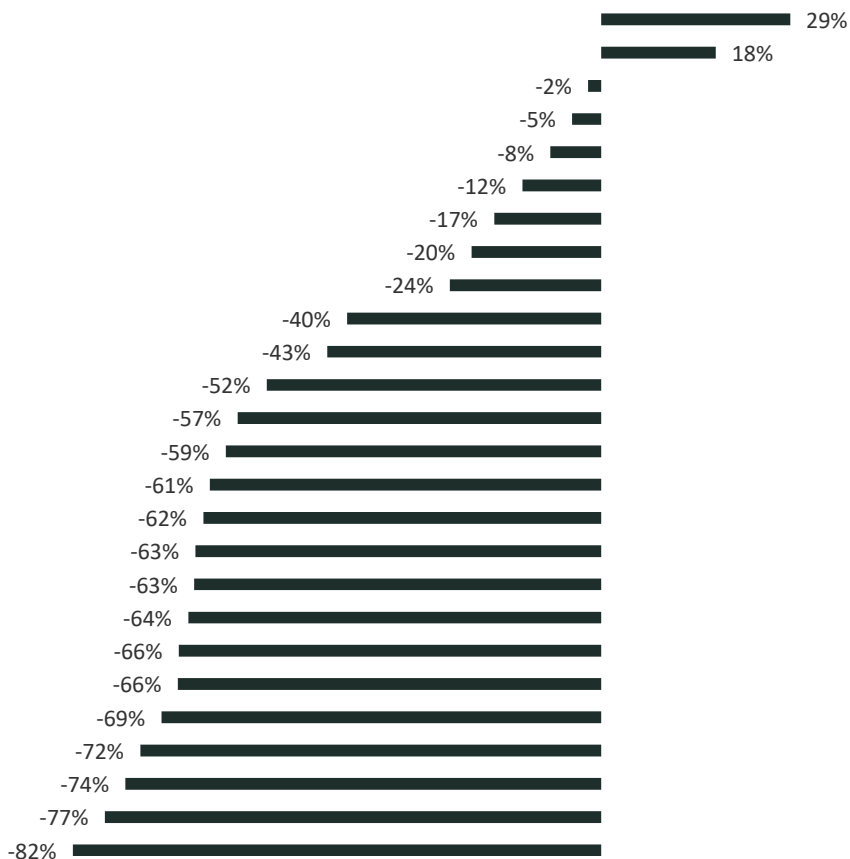
Date	Category	Geography	Involved Parties	Commentary
2/2/2022	Strategic Partnership		 	HyCC and BP signed a joint development agreement to further develop H2-Fifty, a 250 MW green hydrogen plant in the port area of Rotterdam, Netherlands
2/1/2022	Capital Markets		 	Ekona Power received a \$62mm equity investment to commercialize its novel methane pyrolysis technology platform to produce clean hydrogen
2/1/2022	Noteworthy Project		   	Copenhagen Infrastructure Partners, with the help of Vestas, Naturgy and Enagas, will build a green hydrogen plant in northeastern Spain with a capacity of 44,000 tons of hydrogen per year
1/25/2022	Corporate Collaboration		 	Steelmaker Salzgitter and Ørsted launched a strategic partnership under which Salzgitter will supply Ørsted with low-carbon steel and Ørsted will supply Salzgitter with offshore wind power and green hydrogen
1/19/2022	Strategic Partnership		 	Masdar and Cosmo Energy Holdings, one of Japan's largest energy companies, signed an agreement to explore the development of renewable energy initiatives, including offshore wind projects, in Japan
1/17/2022	Strategic Partnership		 	BP and Oman's ministry of energy and minerals signed a strategic framework agreement that will include the evaluation of wind and solar data
1/10/2022	Noteworthy Project		 	Thyssenkrupp signed a supply contract with Shell for the Hydrogen Holland I project, a 200 MW electrolysis plant in the port of Rotterdam, Netherlands that will be supplied with power coming from the future Hollandse Kust North offshore wind farm
12/3/2021	Noteworthy Project			Independent power producer Total Eren SA plans to build a 10 GW onshore wind farm in Chile's Magallanes region to produce green hydrogen
12/1/2021	Industrial Decarbonization		 	Iberdrola and H ₂ Green Steel signed a \$2.6bn deal to build a 1 GW green hydrogen production plant on the Iberian Peninsula
11/30/2021	Corporate Collaboration		 	Plug Power and Acciona Energía announced the formation of a 50-50 joint venture that will develop, operate, and maintain green hydrogen projects throughout Spain and Portugal
11/29/2021	Noteworthy Project			BP announced plans to build a new large-scale green hydrogen production facility in England that could deliver up to 500 MWe of hydrogen production by 2030
11/24/2021	International Agreement		 	Scatec's Green Hydrogen Consortium in Egypt selected Plug Power as the technology provider for a 100 MW green hydrogen facility to be built in Ain Sokhna, Egypt that will produce 90,000 tons of green ammonia annually
11/24/2021	Policy Support			Germany announced its aspirations of becoming a center for green hydrogen technology, and mandated that gas-fired power plants be hydrogen ready for conversion

Sources: Company Press Releases

Alternative Energy | Hydrogen-Related Stock Basket

The table below includes pure-play hydrogen companies and companies that have exposure to hydrogen through offerings of equipment, products and services

LTM Total Return %



LTM Trading Table

Ticker	Listing	Company	Market Cap (\$M)
BKR (NASDAQ)	U.S.	Baker Hughes Company	27,208
LIN (NYSE)	U.S.	Linde plc	149,042
3407 (TSE)	Japan	Asahi Kasei Corporation	13,546
APD (NYSE)	U.S.	Air Products and Chemicals, Inc.	53,986
CMI (NYSE)	U.S.	Cummins Inc.	31,254
FTI (NYSE)	U.S.	TechnipFMC plc	2,997
8088 (TSE)	Japan	Iwatani Corporation	2,632
ACC (OB)	Norway	Aker Carbon Capture ASA	1,110
GTLS (NYSE)	U.S.	Chart Industries, Inc.	4,268
JMAT (LSE)	United Kingdom	Johnson Matthey Plc	4,516
A336260 (KOSE)	Korea	Doosan Fuel Cell Co., Ltd.	1,895
MCPHY (ENXTPA)	France	McPhy Energy S.A.	515
BE (NYSE)	U.S.	Bloom Energy Corporation	3,090
NFE (NASDAQ)	U.S.	New Fortress Energy Inc.	4,628
ITM (AIM)	United Kingdom	ITM Power Plc	2,068
NEL (OB)	Norway	Nel ASA	1,967
NKLA (NASDAQ)	U.S.	Nikola Corporation	3,243
CWR (AIM)	United Kingdom	Ceres Power Holdings plc	1,439
PCELL (OM)	Sweden	PowerCell Sweden AB (publ)	773
HYZN (NASDAQ)	U.S.	Hyzon Motors Inc.	1,317
PLUG (NASDAQ)	U.S.	Plug Power Inc.	12,374
HTOO (NASDAQ)	U.S.	Fusion Fuel Green PLC	78
ACH (OB)	Norway	Aker Clean Hydrogen AS	348
BLDP (TSX)	Canada	Ballard Power Systems Inc.	2,760
HYSR (OTCPK)	U.S.	SunHydrogen, Inc.	164
FCEL (NASDAQ)	U.S.	FuelCell Energy, Inc.	1,694

Sources: S&P Market Intelligence. Market Cap and LTM Total Return % as of 2/14/2022

GreenFront Energy Partners - Overview



GreenFront Energy Partners | Founding Partners and Service Offering

Track record of execution for developers, investors, and corporate clients

GreenFront Founding Partners



Robert Birdsey – Managing Director

- Head of BB&T Energy Investment Banking 2013-2020
- VP in J.P. Morgan’s Energy Investment Banking group prior to joining BB&T
- MBA, University of Virginia; BA, Sewanee



Adam Hahn – Managing Director

- Led BB&T’s Utility Investment Banking coverage 2015-2020
- Prior to BB&T, worked in the CFO’s group at Dominion Energy
- MBA, University of Richmond; BBA, James Madison University



Whit Wall – Managing Director

- Led BB&T’s Infrastructure Investment Banking coverage 2015-2020
- Environmental consultant for JJ Blake & Associates prior to BB&T
- MBA, University of Virginia; BS, James Madison University

Service Offering – Exclusively Focused on Alternative Energy



Capital Formation

Raising capital for projects and platform growth initiatives



M&A Advisory

Advising on purchase/sale of alternative energy assets + equity



ESG / PPA Advisory

Representing corporates in renewable energy procurement efforts

GreenFront Energy Partners | Coverage Universe

GreenFront's go-to market strategy enables significant synergies

Closely-Linked Coverage Universe



Renewable Power

Solar, Wind, Storage



Alternative Energy

Renewable Fuels, Carbon Capture,
Hydrogen



ESG Advisory

Corporate procurement of renewable
energy & carbon credits

GreenFront differentiation

- *Regional market intelligence: Our experience negotiating PPA's gives us on-the-ground information specific to different RTO/ISO's across the country*
- *Corporate Finance: As solar/wind/storage move from alternatives to incumbent resources, financing structures are evolving. GreenFront's deep experience in traditional corporate finance helps our clients evolve beyond project financing strategies*

GreenFront differentiation

- *Experience: Prior O&G background has enabled GreenFront to already transact in very early-stage markets (RNG, CCUS, H₂, LFG, GTL)*
- *Environmental attributes: deep knowledge around revenue pathways for LCFS, 45Q, voluntary CO₂ credits*
- *Corporate network: PPA advisory assignments keep us in regular dialogue with corporate sustainability decision-makers*

GreenFront differentiation

- *Risk Management: GreenFront has an exclusive partnership with SunAirio[®], enabling us to provide clients with proprietary analytics around correlation/covariance between weather, resource production, and market pricing*
- *Negotiating edge: GreenFront builds project models to understand Seller economics, identifying beneficial leverage points that benefit our corporate clients. We know where developers can bend on certain terms and where they can't*

GreenFront Energy Partners | Credentials

Prolific deal execution in the last 12 months



Has secured a structured equity private placement to finance a 1 GW solar-and-storage pipeline in Virginia with



**Greenbacker
CAPITAL**

2021



Has secured a \$25 million equity commitment to finance commercial solar development with

Hartz Capital

2021



Has signed an exclusive wind PPA totaling 100 MW of procurement with



2021



Has negotiated a private placement for development capital with



2021

**Fortune 500
Corporate**

Has signed an exclusive solar PPA totaling 250 MW of procurement with



2021



Has signed an exclusive solar PPA totaling 250 MW of procurement with



2020



Was advised on the market entry of SaaS Safety Application into the utility end market

2020

Sell-side M&A advisor to a Battery Testing, Inspection and Compliance Company



Cleantech Sell-side M&A

Pending

Financial advisor to RNG developer in a private placement transaction



\$60mm Private Placement

Pending

Sell-side advisor to utility-scale and distributed generation solar developer



Private Placement

Pending

Sell-side advisor to utility-scale solar development asset



80 MW Project

Pending

Financial advisor to LFG/RNG company in a private placement transaction

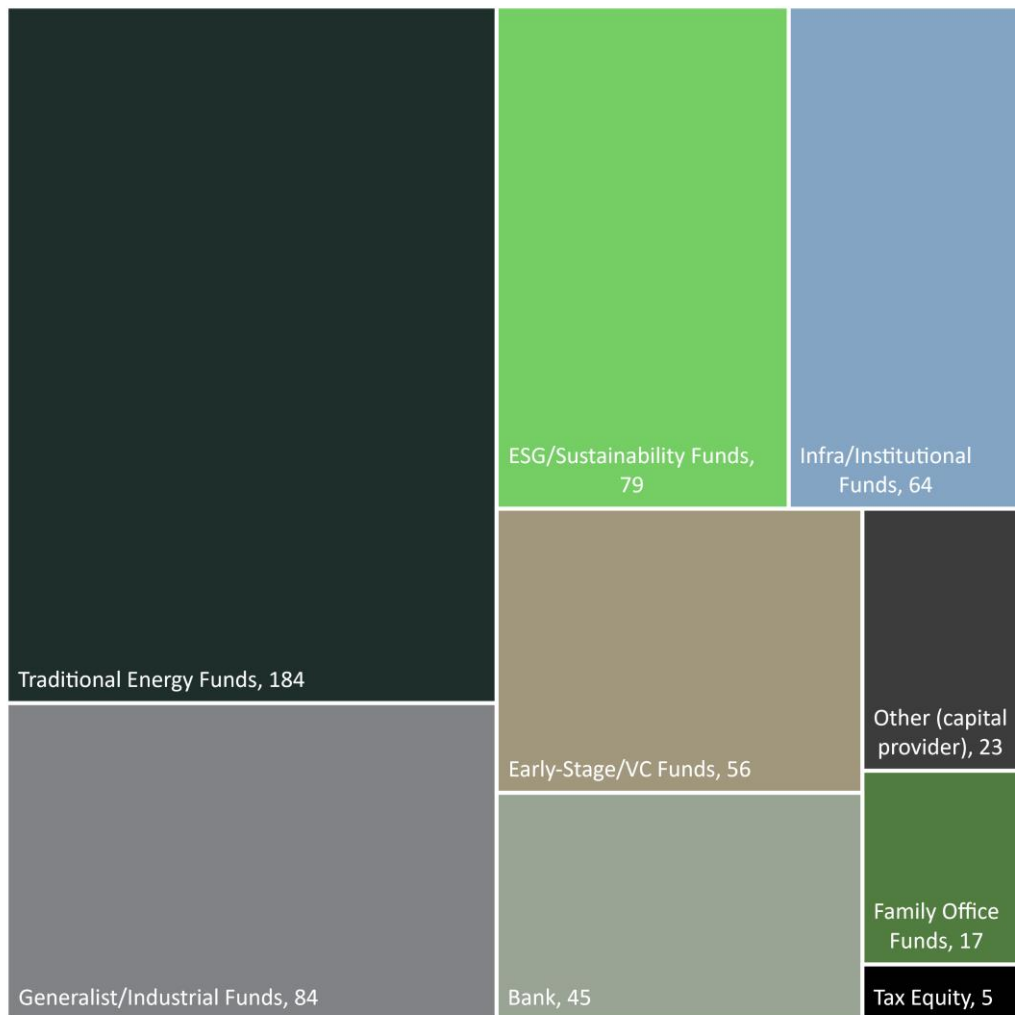


Minority Private Placement

Pending

GreenFront Energy Partners | Investor Network

GreenFront efficiently covers a very broad network of contacts across the Alternative Energy sector, while also having the requisite market knowledge to quickly identify the most relevant parties



GreenFront tracks over **1,900** corporate relationships through its Salesforce CRM software, including...

557 Capital Providers, segmented by capital type & strategy (see left), and appetite within the Alternative Energy Universe

307 Developers, segmented by focus area (i.e. Solar/Wind, Storage, RNG, Carbon Capture, Hydrogen, etc)

560 Corporates pursuing different ESG strategies

129 Traditional Energy Firms from the Oil & Gas, Power/Utility, and LDC space