

TECHNICAL ADVISORY & ENGINEERING

ARBUTUS CONSULTANTS

Grey Matter to Green Solutions.

Technical judgement for energy assets.

From feasibility and technical diligence through engineering, project assurance and asset performance.

21+

YEARS

40+ GW

TECHNICAL EXPERIENCE

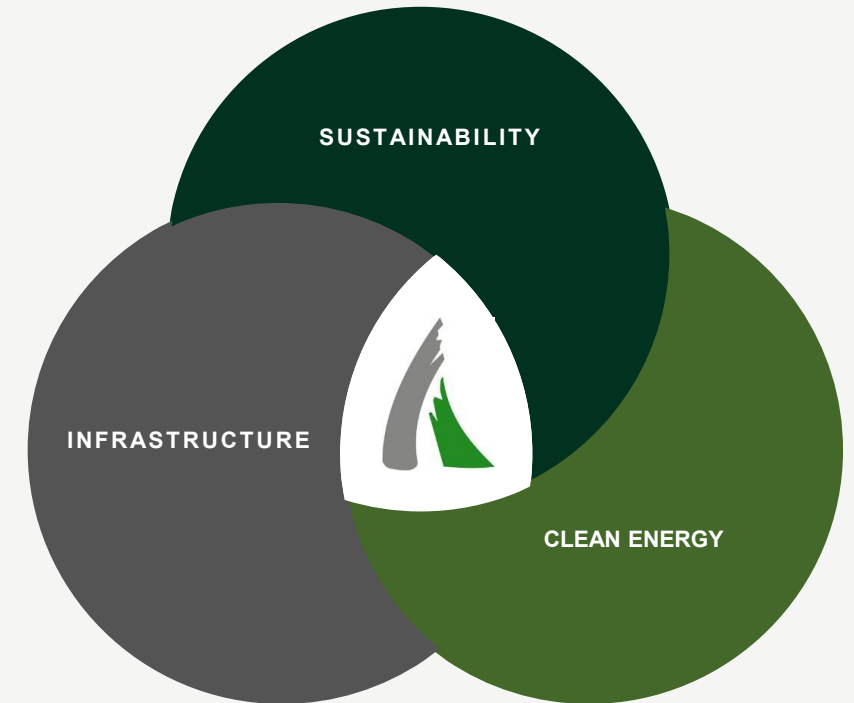
350+

CLIENTS

39

COUNTRIES

ARBUTUS CONSULTANTS



ADVISORY · ENGINEERING · ASSET PERFORMANCE

WHO WE ARE

Technical depth. Independent judgement.

Arbutus Consultants is a technical advisory and engineering firm supporting developers, investors, lenders, EPCs, OEMs and asset owners across renewable energy and power infrastructure. For more than two decades, our teams have worked across project development, investment diligence, engineering, construction assurance and operating-asset performance.

Our experience spans **solar PV, onshore wind, BESS, power T&D and emerging green hydrogen advisory**, combining multidisciplinary engineering capability with project and client experience across 39 countries.



ENGINEERING-LED

Our advisory work is supported by teams working on design, grid, QA/QC, construction and asset performance.



INDEPENDENT BY STRUCTURE

We do not manufacture or sell equipment, undertake EPC construction, own the assets we assess, or provide O&M execution.



ACROSS THE LIFECYCLE

One technical organisation supports projects from feasibility and diligence through engineering, construction assurance and operation.



CROSS-MARKET

750+ assignments provide reference points across different technologies, grids, regulations and project environments.

BY THE NUMBERS

More than two decades across energy advisory and engineering.

21+ YEARS

Continuous operations since founding.

40+ GW

Technical experience across advisory, engineering and asset performance services.

39 COUNTRIES

Client and project experience across multiple markets.

50+ ENGINEERS & EXPERTS

Multidisciplinary technical team supported by specialist associates and delivery partners where required.

350+ CLIENTS

Developers, investors, lenders, EPCs, OEMs and asset owners.

750+ ASSIGNMENTS

Technical advisory, engineering, project assurance and asset performance mandates delivered since founding.

Metric note: GW figures represent cumulative technical experience. A project may involve more than one service line and should not be aggregated across individual service categories.

WHAT WE DO

Three core practices across the asset lifecycle.

01



ADVISORY

Evaluate the opportunity. Understand the risk.

Technical Due Diligence · Lender's Technical Advisory
· feasibility · energy modelling · bankability ·
renewable energy procurement strategy · energy-
transition advisory

300+ assignments

02



ENGINEERING & PROJECT ASSURANCE

Engineer it. Review it. Assure delivery.

Owner's Engineering · FEED · Detailed Engineering ·
grid studies · procurement support · factory and site
QA/QC · commissioning support · Technical
Capability Centers

450+ assignments

03



ASSET PERFORMANCE

Understand performance. Resolve the cause.

Performance audits · operational diagnostics · root-
cause investigations · repowering · life-extension
assessment

10+ assignments



CAPACITY BUILDING — a cross-cutting capability, not lifecycle-staged. 1,500+ trained.

TECHNOLOGY COVERAGE

Established capabilities across renewable energy and power infrastructure.



SOLAR PV

Utility-scale, C&I, floating solar and hybrid configurations.



ONSHORE WIND

Resource assessment, energy yield and project technical advisory.



BESS

Sizing, dispatch, degradation, grid integration and hybrid-system assessment.



POWER T&D

Transmission, distribution, interconnection, power-system studies and grid compliance.

EMERGING ADVISORY CAPABILITY



GREEN HYDROGEN

Early-stage feasibility, renewable-energy integration and technical assessment of hydrogen production concepts.

ADVISORY

Independent technical assessment before capital is committed.

TECHNICAL DUE DILIGENCE & LTA

7+ GW



Independent review of design, yield, contracts and status for investment and financing decisions.

Includes: pre-investment and acquisition due diligence, lender's technical advisory, independent technical review for financial close, construction monitoring and drawdown support

FEASIBILITY & MARKET STUDIES

10+ GW



Site, resource, technology, permitting and commercial assessments supporting early-stage project decisions.

Includes: site and technology screening, preliminary and bankable resource assessment, energy-yield review, project configuration and feasibility analysis

BANKABILITY & RISK ASSESSMENT

7+ GW



Technical, contractual and regulatory risk assessment with practical mitigation measures.

Includes: technology and OEM assessment, contract and warranty review, technical risk registers, bankable Detailed Project Report preparation



WHY IT MATTERS

Technical risks identified early are easier to manage before financing, procurement or construction decisions become difficult to reverse.

ADVISORY

Modelling, procurement and transition decisions grounded in project realities.

ENERGY MODELLING

15+ GW



Energy-yield and storage analysis supporting investment, financing and operating decisions.

Includes: P50–P99 energy-yield assessments, BESS sizing, dispatch and degradation modelling, hybrid-system optimisation, yield revalidation for operating assets

RENEWABLE ENERGY PROCUREMENT



Technical and commercial assessment of open-access and group-captive sourcing in India.

Includes: procurement-option assessment, tariff and regulatory modelling, group-captive and open-access evaluation, sourcing strategy development

ENERGY TRANSITION ADVISORY



Practical decarbonisation planning aligned to operating constraints and reporting requirements.

Includes: baseline assessment, transition pathways, phased implementation planning, documentation and reporting support



WHY IT MATTERS

Independent modelling helps clients test the technical and commercial assumptions behind long-term energy and investment decisions.

ENGINEERING & PROJECT ASSURANCE

Engineering from concept through implementation.

OWNER'S ENGINEERING

3+ GW



Owner-side technical support across engineering, procurement, construction and commissioning.

Includes: design and engineering review, contractor and technical-interface coordination, construction monitoring, commissioning and handover support

FEED & BID ENGINEERING

2+ GW



Engineering inputs establishing the technical basis for procurement, tendering and execution.

Includes: FEED development, technical specifications, bills of quantities and materials, tender and bid engineering

DETAILED ENGINEERING

13+ GW



Multidisciplinary electrical, civil, structural, mechanical and hydrology engineering for power projects.

Includes: design teams working across technical interfaces to identify issues before they reach site



WHY IT MATTERS

Coordinated engineering reduces interface gaps between design disciplines, procurement and construction.

ENGINEERING & PROJECT ASSURANCE

Technical decisions beyond the design package.



EPC & EQUIPMENT PROCUREMENT SUPPORT

Technical support for contractor and equipment selection from specification through contract finalisation.

Includes: equipment technical specifications, EPC/OEM tender evaluation, technical bid comparison and benchmarking, technical inputs during contract finalisation



GRID & POWER SYSTEM STUDIES

Technical studies supporting interconnection, system performance, protection and grid compliance.

Includes: load-flow studies, short-circuit studies, protection coordination, grid-interconnection and impact assessment, power-quality studies, grid-compliance support

LIFECYCLE CONSIDERATIONS

End-of-life and decommissioning considerations can be incorporated into repowering, life-extension and lifecycle assessments where required.



WHY IT MATTERS

Early resolution of procurement and grid interfaces reduces avoidable changes during project execution.

TECHNICAL CAPABILITY CENTERS

Dedicated engineering capacity aligned to your standards and pipeline.

A Technical Capability Center is a dedicated team of Arbutus engineers working on a client's project portfolio, processes, tools and technical standards over an extended engagement. Arbutus manages recruitment, infrastructure, training and team continuity, while the client retains day-to-day control of technical priorities and deliverables.

SUITED FOR

- developers and IPPs scaling engineering capacity across multiple projects
- international organisations seeking dedicated India-based engineering capability
- OEMs requiring design, product or application-engineering support
- EPCs managing variable engineering demand across concurrent projects

DELIVERY MODEL

Dedicated A defined team aligned to the client's standards, tools and workflow.

Integrated Works as an extension of the client's engineering organisation.

Scalable Capacity can evolve with the client's project pipeline.

Continuity Arbutus manages recruitment, training, infrastructure and retention.

ENGAGEMENT MODEL Long-term, dedicated engineering capacity typically contracted on a monthly basis.

Independence note: TCC teams execute client-directed engineering scope. Where an independent technical review is required on the same project, it is delivered separately under the appropriate advisory or project-assurance mandate.

ENGINEERING & PROJECT ASSURANCE

Verification from manufacturing through commissioning.



2+ GW

FACTORY AUDITS

Assessment of manufacturer facilities, processes, certifications and production capability before or during procurement.



1+ GW

IN-PROCESS QUALITY CONTROL

Production-line inspection and monitoring to identify manufacturing non-conformances before dispatch.



1+ GW

PRE-DISPATCH INSPECTION & FAT

Inspection, testing and non-conformance tracking prior to equipment shipment.



750+ MW

CONSTRUCTION MONITORING

Onsite review of installation quality, workmanship, progress, non-conformances and as-built conditions.



500+ MW

COMMISSIONING & START-UP SUPPORT

Pre-commissioning verification, testing witness, performance-test review and commissioning support.



ISO 9001:2015
CERTIFIED

Engineering and assurance activities are performed against applicable project specifications, recognised technical standards and relevant grid codes.

ASSET PERFORMANCE

Diagnose performance. Establish the cause. Define the response.

PLANT PERFORMANCE AUDITS

2+ GW



Technical assessment of operating assets using field inspection, plant data and specialist testing.

Includes: drone thermography, EL imaging, IV-curve tracing, mobile test laboratories, portfolio benchmarking

OPERATIONAL DIAGNOSTICS

100+ MW



Root-cause investigation of underperformance and equipment or system failures.

Includes: performance and failure analysis, remediation recommendations, post-remediation verification, review of forecasting and performance assumptions

REPOWERING & LIFE-EXTENSION



Technical assessment of whether an ageing asset should continue, upgrade, repower or retire.

Includes: equipment-condition assessment, remaining-life review, technology-upgrade options, repower / continue / retire decision support



WHY IT MATTERS

Evidence-based diagnostics help owners, lenders and insurers distinguish symptoms from underlying technical causes.

CAPACITY BUILDING

Developing technical capability alongside the energy transition.



1,500+
TRAINED

Arbutus has trained 1,500+ students, engineers, technicians and professionals across renewable-energy technologies and project disciplines. Programmes range from technical fundamentals to applied engineering and project-specific capability development.

Selected programmes have been delivered in association with the Skill Council for Green Jobs, Government of India.

PROOF IN PRACTICE

Selected assignments across advisory and asset assessment.



3,500 MW / 4,500 MWh PV-BESS — SOUTHEAST ASIA

Pre-Investment Technical
Diligence

Technical due diligence on a large single-location PV-BESS portfolio for an investment decision, including desktop engineering review and site verification of key project assumptions.



400+ MWp — INDIA

Acquisition Plant Audits

Technical due diligence across 21 operating solar plants in seven states, combining performance-data review with field assessment using EL imaging, IV-curve tracing and drone thermography.



100+ MW HYBRID — INDIA

Renewable Energy & Compliance
Strategy

Renewable-energy procurement and compliance assessment for an industrial client, including evaluation of procurement options and preliminary feasibility of a PV-Wind-BESS hybrid and green hydrogen pathway.

Additional project credentials available subject to confidentiality requirements.

PROOF IN PRACTICE

Selected assignments across engineering and project assurance.



20 MW SOLAR PV + POOLING SUBSTATION — AFRICA

Detailed Engineering

Multidisciplinary engineering for a tracker-based solar PV plant and pooling substation, including detailed design and technical vendor interface.



1+ GWp BIFACIAL MODULES — INDIA

Factory Audit & In-Process QC

Factory audit and production quality-control programme for bifacial PV modules, with dedicated inspection resources deployed through the manufacturing period.



UNITED STATES / GLOBAL PROJECT SUPPORT

ONGOING

Dedicated Technical Capability
Center

Long-term dedicated engineering team supporting the project portfolio of a US-based equipment company across multiple markets and time zones.

Additional project credentials available subject to confidentiality requirements.

OUR CLIENTS

Trusted across the energy value chain.



INVESTORS & PLATFORMS

KKR · Macquarie · GIP · MPIC · BII · CIP · Brookfield
Renewables · APG · Vector Green · Evren Energy · Stride
Climate Investments



LENDERS & DEVELOPMENT INSTITUTIONS

ADB · GIZ · Bank of India · Central Bank of India · State
Bank of India · Tata Capital · IREDA



DEVELOPERS, IPPs & ASSET OWNERS

ACEN Renewables · CREC · Avaada · August Energy · ib
vogt · ReNew Power · Fortum · Ignis · Radiance
Renewables



ENERGY & INFRASTRUCTURE

MSEDCL · OTPC · HPCL · BPCL · Maharashtra Metro ·
Nayara Energy



ENGINEERING, EPCs & OEMs

AECOM · Alvarez & Marsal · Enertis Applus · Leidos · Array
Technologies · Arctech Solar · Voltas · Danway · Greencells
· Metka

Selected organisations served across different mandates. Public reference rights and confidentiality terms vary by engagement.

GLOBAL REACH

Experience across 39 countries.

SOUTH ASIA

30+ GW

NORTH AMERICA

5+ GW

SOUTHEAST ASIA

4+ GW

EUROPE

500+ MW

MENA

300+ MW

OCEANIA

250+ MW

India offices: Pune · Coimbatore

Delivery model: India-based technical teams supported by in-country specialists and teaming partners where required.



39
COUNTRIES

Project and client experience across multiple stages
of the asset lifecycle.

LEADERSHIP

Experienced leadership across engineering, advisory and operations.



Dr. P. Jayakumar

Founder & Chairman

50+ years of industrial experience, including more than three decades in renewable energy.



Vivek Jayakumar

Co-Founder & CEO

23+ years of cross-functional industry experience, including 16+ years in renewable energy.



Durgesh Nandini

Director - Operations

18+ years across operations, project controls, manufacturing, petrochemicals and renewable energy.



Pooja Shimpi

Head - Advisory

20+ years across renewable energy, policy, energy-transition advisory and industry.



Mukesh Kumar

Head - Engineering & Project Assurance

20+ years across engineering, project management, commissioning and QA/QC.



Chytanya Abhyankar

Head - Asset Performance

35+ years in engineering and consulting, including solar PV project experience across Asia, Europe and Africa.



Jyothi V

Principal - Civil & Structural

35+ years in civil and structural engineering across power and heavy engineering.



Siddharth Mudaliar

Principal Analyst - Energy Transition

20+ years across financial markets, sustainability and renewable energy.

ADVISORY COUNCIL

External perspective across policy, technology, industry and strategy.



Dr. Alok Srivastava

Chair

Former Secretary, Ministry of Law & Justice, Government of India, and former Member, NCLAT. Brings extensive experience across public policy, infrastructure and institutional governance.



Dr. Purandar Chakravarty

Member

35+ years in technology and innovation leadership, including alternate energy and ESG. PhD in Engineering, IISc Bangalore.



Venkataraman Ranganathan

Member

40+ years across turnaround, restructuring, operations and corporate leadership. Senior Advisor, Alvarez & Marsal.



Abhimanyu Pati

Member

30+ years across operational and strategic leadership in automotive and IT, with experience in operations, strategy and business analytics.

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 www.arbutusconsultants.com

 [Follow us on LinkedIn](#)

APPENDIX A

What we stand for



VISION

Become the partner of choice for services in clean energy, sustainability and engineering.



MISSION

Provide innovative, sustainable solutions to our clients consistently, thereby building lasting relationships based on trust and value delivered.



VALUES

Passion · Professionalism · Commitment · Quality · Ethics

ALIGNED TO THE UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS



APPENDIX B

Independence & scope boundaries

Arbutus maintains defined scope boundaries to preserve the independence of its technical advisory and assurance work.

- No equipment manufacturing or sales.
- No EPC or construction execution.
- No asset ownership or downstream commercial participation in advised projects.
- No O&M execution.
- Independent advisory and assurance mandates are segregated from client-directed engineering delivery where required.

HOW THIS APPLIES TO TCC ENGAGEMENTS

Technical Capability Center teams execute client-directed engineering scope and operate as dedicated delivery capacity. Where an independent TDD, LTA, Owner's Engineering review or other assurance mandate is required on the same project, that work is structured and delivered separately under the relevant independence safeguards.