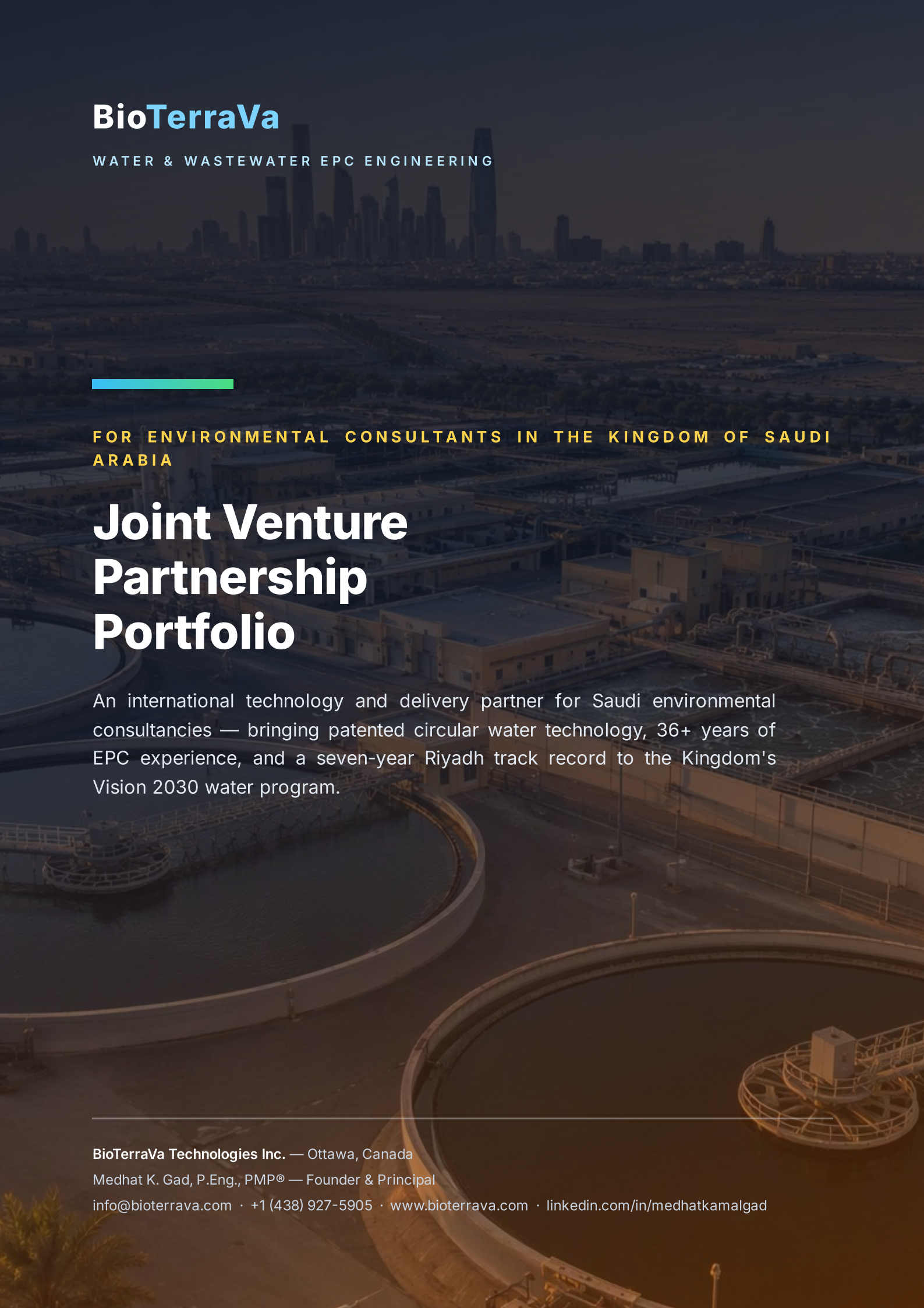




BioTerraVa

WATER & WASTEWATER EPC ENGINEERING

FOR ENVIRONMENTAL CONSULTANTS IN THE KINGDOM OF SAUDI ARABIA

Joint Venture Partnership Portfolio

An international technology and delivery partner for Saudi environmental consultancies — bringing patented circular water technology, 36+ years of EPC experience, and a seven-year Riyadh track record to the Kingdom's Vision 2030 water program.

BioTerraVa Technologies Inc. — Ottawa, Canada

Medhat K. Gad, P.Eng., PMP® — Founder & Principal

info@bioterrava.com · +1 (438) 927-5905 · www.bioterrava.com · [linkedin.com/in/medhatkamalgad](https://www.linkedin.com/in/medhatkamalgad)

01 · THE PARTNERSHIP OPPORTUNITY

Your Local Strength, Our Delivery Depth

Saudi Arabia's water sector is in the largest build-out in its history — and the work is increasingly awarded to teams that combine local licensing and relationships with proven international technology and EPC delivery. That combination is exactly what a BioTerraVa joint venture offers a Saudi environmental consultancy.

Under Vision 2030, the Kingdom is investing tens of billions of riyals in wastewater treatment, water reuse, and environmental infrastructure — through the National Water Company, the Saudi Water Partnership Company (SWPC), the Ministry of Environment, Water and Agriculture, and giga-project authorities from NEOM to the Red Sea. Treated sewage effluent reuse targets, industrial wastewater mandates in Jubail and Yanbu, and sludge-to-resource programs all demand specialized process engineering that is scarce in the local market.

36+ YEARS OF EXPERIENCE	7 YEARS IN RIYADH	4 PROVISIONAL PATENTS	700K M ³ /DAY LARGEST SYSTEM
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BioTerraVa Technologies Inc. is a Canadian EPC engineering firm founded by **Medhat K. Gad, P.Eng., PMP®** — a process engineer who spent seven years inside the Riyadh Sewage Treatment Project, led water and environmental ventures across Egypt and Türkiye, and now brings four patent-pending circular water technologies to market. We are seeking Saudi environmental consultancies as joint venture partners: you hold the Kingdom's licensing, client relationships and local presence; we bring the process technology, EPC delivery capability and international references that win and deliver major programs.



Figure 1 — The partnership model: Saudi consultancy strength, international delivery depth — one accountable team.

02 · WHAT BIOTERRAVA BRINGS TO THE JV

Technology, Track Record and a Principal Who Has Delivered in Riyadh

Patent-pending circular water technology

Four provisional patents — steel-slag valorisation into treatment media, high-loading phosphorus-capture biochar, a three-output biosolids pyrolysis process, and an integrated circular system with biogas enhancement — under bench-scale validation at the University of Western Ontario with Ontario Centre of Innovation and IPON support. Differentiated technology is the single strongest discriminator in Saudi technical evaluations.

A record the Kingdom already knows

Seven years (1993–2000) coordinating operations and maintenance at the Riyadh Sewage Treatment Project — a 360+ staff organization at one of the region's largest sewage complexes — where our principal developed one of the Arab world's first CMMS platforms, later adopted by 10 Egyptian WWTPs and presented to the President of Egypt in 1999.

EPC delivery at every scale

From 400 m³/day packaged plants to a 700,000 m³/day, EGP 760M national drainage rehabilitation program — plus a €16M waste-to-energy facility in Türkiye as co-founder and CTO. Feasibility, process design, procurement, construction management, commissioning and operator training under one accountable senior engineer.

Sludge-to-resource leadership

An eight-year joint venture with the Greater Cairo Sewage Authority and Lafarge converting 140,000 tons/year of sewage sludge into cement-kiln fuel — directly relevant to the Kingdom's sludge management and circular-economy ambitions.

Regional fluency, Canadian standards

Arabic-speaking leadership with three decades of delivery across Saudi Arabia, Egypt, Türkiye, the UAE and North America — combined with a Canadian P.Eng. practice operating under a Professional Engineers Ontario Certificate of Authorization. Gulf clients get Western engineering governance without a cultural translation layer.

"The Kingdom does not need another consultant selling studies. It needs partners who have commissioned plants, run 360-person O&M organizations, and turned sludge into revenue. That is what we put into a joint venture."

— Medhat K. Gad, P.Eng., PMP®, Founder & Principal

03 · THE JOINT VENTURE MODEL

How We Win and Deliver Together

A BioTerraVa JV is structured so each partner does what it does best — and the client sees one accountable, world-class team.

ELEMENT	SAUDI CONSULTANCY PARTNER	BIOTERRAVA
Market access	SCE licensing, commercial registration, municipal and ministry relationships, prequalification history, bid bonds and local content credentials	International references, technology portfolio, North American engineering governance
Business development	Tender intelligence, client interface, Arabic proposal production, negotiations	Technical win themes, process design narratives, evaluation-scoring strategy, reference projects
Engineering & design	Local standards compliance (NWC, MEWA, RC), site data, permitting support, Arabic documentation	Process & detailed design, technology integration, hydraulic and process simulation (BioWin / GPS-X), value engineering
Delivery	Local subcontracting, logistics, site staffing, government liaison	EPC management, procurement of specialized equipment, commissioning, performance testing, operator training
Operations	Local workforce, HSE compliance, community interface	O&M systems, CMMS implementation, troubleshooting, asset management frameworks
Commercial	Flexible structures: project-specific JV, framework alliance, technology licensing, or equity partnership — scoped to the opportunity	

Target Opportunities for the JV

- **SWPC / NWC wastewater programs** — expansions, reuse upgrades and sludge packages
- **Industrial city effluent** — Jubail, Yanbu, MODON heavy-metals treatment
- **Giga-project infrastructure** — NEOM, Red Sea, Qiddiya, Diriyah water packages
- **Royal Commission & municipal upgrades** — capacity expansion within existing footprints
- **Biosolids & circular economy** — sludge-to-energy, nutrient recovery, PFAS-ready strategy
- **O&M & asset management** — CMMS, operator capacity building, optimization

04 · TECHNICAL CAPABILITIES

Full-Lifecycle Water & Wastewater Engineering

Eight service lines cover every stage of a treatment asset's life — deployable in the Kingdom through the JV from day one.

CAPABILITY	SCOPE DELIVERED
EPC Project Delivery	Full Engineer–Procure–Construct delivery from concept to commissioning — design-build and EPC contracting for plants 400 to 700,000 m ³ /day
WWTP Expansion & Upgrades	Capacity audits, hydraulic debottlenecking and retrofits that multiply capacity within existing footprints — proven at 4× without new concrete
Industrial Wastewater	Steel, metal finishing, petrochemical, refining, food & beverage, dairy and pharmaceutical effluent — heavy metals and landfill leachate
Biosolids & Resource Recovery	Anaerobic digestion enhancement, dewatering, drying, sludge-to-fuel and nutrient recovery (struvite, biochar media)
PFAS & Emerging Contaminants	Source tracking, sampling programs, GAC / ion exchange / membrane selection and biosolids risk strategy
Remote & Packaged Systems	Modular plants for remote sites — engineered for operability, automation, remote monitoring and local operator training
Compliance & Regulatory	Environmental compliance audits, permitting documentation, ISO 14001 gap assessment and expert peer review
Operations & Asset Management	O&M leadership, SOPs, CMMS platforms, lifecycle costing and interim operations management (teams up to 360+ staff)



Figure 2 — Advanced treatment infrastructure — MBR, tertiary filtration and process intensification retrofits.

05 · REGIONAL TRACK RECORD

Delivered in the Region, Proven at Scale

Programs our principal has designed, built or operated — the references your JV bids can stand on.

PROJECT	LOCATION	TYPE	SCOPE & SCALE
Riyadh Sewage Treatment Project (RSTP)	Riyadh, Saudi Arabia	Operations & O&M Systems	Seven years coordinating O&M at one of the region's largest sewage complexes — 360+ staff organization ; developed one of the Arab world's first CMMS platforms, later adopted by 10 Egyptian WWTPs and presented to the President of Egypt, 1999.
Kitchener Drain Rehabilitation Program	Nile Delta, Egypt	Domestic Industrial	+ Rehabilitation design for plants on one of the world's most polluted drains — quadrupling capacity within existing footprints for agricultural reuse. 700,000 m³/day — EGP 760M program.
Sludge-to-Fuel Program with Lafarge	Greater Cairo, Egypt	Resource Recovery	Eight-year JV with the Greater Cairo Sewage Authority converting sewage sludge into cement-kiln fuel — 140,000 tons/year.
Mobile WWTP Fleet — Ministry of Environment	Cairo, Egypt	Modular Mobile	/ JV with the Arab Organization for Industrialization: design, manufacture and handover of 10 mobile treatment plants × 100 m³/day for unserved villages.
INTEC WWTP Capacity Upgrade	Cairo, Egypt	Municipal Retrofit	Process retrofit quadrupling capacity within the existing footprint — 5,000 → 20,000 m³/day without new concrete.
GP-AMG Waste-to-Energy Facility	Düzce, Türkiye	Waste-to-Energy	Co-founder & CTO: licensing, design, erection and operation of a biomass pyrolysis facility with university R&D protocol — €16M — 60K t/yr charcoal, 70K MWh/yr.
North American Programs	Ontario, Canada · Florida, USA	Municipal Industrial Technology	/ Ontario WWTP expansions (400–50,000 m ³ /day), steel mill heavy-metals programs and First Nations packaged systems; EKO NANO TECH LLC established in Florida with Genesis Water Technologies.

06 · LEADERSHIP

Medhat K. Gad, P.Eng., PMP® — Founder & Principal



A senior process engineer with 36+ years across five countries — including seven years in Riyadh — spanning plant design, EPC delivery, operations leadership and environmental technology ventures.

- **B.Sc. Civil Engineering** — Cairo University
- **P.Eng.** — Professional Engineers Ontario · **PMP®**
- **3 published papers** — Montreal · Berlin · Antalya
- **4 provisional patents** — circular water technology, validated at Western University with OCI & IPON support
- **MOH-accredited pyrolysis technology** — Egypt, 2014
- Arabic and English — full delivery capability in both languages

Career Timeline

1993 – 2000 · SAUDI ARABIA

Civil Engineer & CMMS Developer — Riyadh Sewage Treatment Project

Coordinated O&M at one of the region's largest sewage complexes; built a pioneering CMMS platform — preventive/corrective maintenance, spare-parts forecasting, workforce scheduling — presented to the President of Egypt at the country's first ICT conference, 1999.

2000 – 2010 · EGYPT & SAUDI ARABIA

Founder & CEO — EGACS

Led the national "Computer for Every Student" program with Egyptian banks (100,000+ computers) and built ERP platforms for government and transport clients, including Haj-transport logistics in Makkah.

2010 – 2017 · EGYPT

Founder, Chairman & CEO — NADIC (Elwatanya Co.)

Developed the INNPT nano-material platform with national research institutes; delivered 10 mobile treatment plants via JV with the Arab Organization for Industrialization; authored the EGP 760M Kitchener Drain design; signed the Lafarge sludge-to-fuel contract; earned MOH pyrolysis accreditation.

2017 – 2021 · TÜRKIYE & USA**Co-founder & CTO — GP-AMG · CEO — AMG Enviro**

Built the €16M Düzce biomass pyrolysis facility; piloted nano-materials on textile, tannery and oil-drilling wastewaters; established EKO NANO TECH LLC in Florida with Genesis Water Technologies.

2022 – TODAY · CANADA**Founder & Principal — BioTerraVa Technologies Inc.**

Boutique P.Eng. EPC practice serving municipalities, industry and Indigenous communities — now offering technology and delivery partnerships to Gulf environmental consultancies.

07 · NEXT STEPS

From First Call to First Joint Bid

A partnership can move quickly — the principal engages directly, with no corporate layers between your team and a decision.

STEP	TIMELINE	WHAT HAPPENS
1 · Introductory call	Week 1	A 45-minute call with Medhat Gad to align on markets, clients and opportunities — under NDA if preferred.
2 · Capability exchange	Weeks 1–2	Mutual qualification: our references, technology portfolio and standing against your licensing, prequalifications and pipeline.
3 · Riyadh working session	Weeks 3–6	In-person working visit to Riyadh or Jeddah: pipeline review, target-tender selection, JV term sheet.
4 · JV agreement	Weeks 6–10	Project-specific JV or framework alliance executed — scope, roles, terms, governance.
5 · First joint pursuit	Ongoing	Joint prequalification and bid — BioTerraVa leads the technical proposal; your firm leads the local submission.

Start the Conversation

Every partnership begins with one conversation. A response is guaranteed within one business day.

Company	BioTerraVa Technologies Inc.
Principal	Medhat K. Gad, P.Eng., PMP® — Founder & Principal Engineer
Head Office	399 Warmstone Drive, Stittsville, Ontario K2S 0W2, Canada
Phone	+1 (438) 927-5905 (WhatsApp available)
Email	info@bioterrava.com
Web	www.bioterrava.com · linkedin.com/in/medhatkamalgad
Languages	English · Arabic