

# Prof. Dr. Cem B. Avci

Environmental & Social Impact Consultant

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## PROFILE

Environmental consultant and academic with 30+ years of experience in Environmental and Social Impact Assessments (ESIA), EHS due diligence, soil and groundwater investigation, and contaminated site remediation. Extensive track record delivering EBRD, IFC, EIB, and Equator Principles-compliant studies for major infrastructure, energy, oil & gas, and industrial projects across Turkey and internationally. Professor of Civil Engineering at Bogazici University since 1989.

EDUCATION	EMPLOYMENT HISTORY
<p><b>Ph.D. Civil Engineering</b> Hydraulics &amp; Groundwater Purdue University, 1985</p> <p><b>M.Sc. Water Resources</b> Princeton University, 1981</p> <p><b>B.Sc. Civil Engineering</b> Bogazici University, 1979</p>	<p><b>Professor of Civil Engineering</b>   Bogazici University 1989 – Present Istanbul, Turkey Teaching civil engineering courses; research on groundwater flow modelling and soil remediation. Concurrent academic role throughout consulting career.</p> <p><b>Senior Technical Consultant</b>   ACE Consulting &amp; Engineering Inc. 2016 – Present Istanbul, Turkey Lead consultant for ESDD, ESIA and EHS projects for major international lenders including EBRD and AFD across Turkey and the region.</p> <p><b>Senior Consultant / Technical Advisor</b>   ELC Group / Royal HaskoningDHV Turkey 1992 – 2016 Istanbul, Turkey Led EIA and ESIA studies, EHS regulatory reviews and due diligence assignments for infrastructure, energy and industrial projects seeking international finance.</p> <p><b>Senior Consultant</b>   Woodward-Clyde Consultants (now AECOM) 1985 – 1989 Chicago, USA Phase I and Phase II environmental site investigations; Superfund cleanup projects.</p>
<p><b>LANGUAGES</b></p> <p>Turkish — Native English — Fluent French — Good</p>	
<p><b>MEMBERSHIPS</b></p> <p>American Society of Civil Engineers (ASCE) International Association for Impact Assessment (IAIA)</p>	
<p><b>KEY EXPERTISE</b></p> <ul style="list-style-type: none"> <li>• ESIA / EIA (EBRD, IFC, EIB)</li> <li>• EHS Due Diligence</li> <li>• Soil &amp; Groundwater Investigation</li> <li>• Contaminated Site Remediation</li> <li>• Waste Management</li> <li>• Stakeholder Engagement</li> <li>• Environmental Compliance</li> <li>• Project Finance Advisory</li> </ul>	

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**SELECTED PROJECT EXPERIENCE**

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**Environmental & Social Due Diligence — Adana Turgut Ozal Tram** — EBRD, 2024–2025

ESDD for a 9.7 km tram project (14 stations) in Cukurova District, Adana. Assessment conducted in line with EBRD 2019 Environmental and Social Policy and Performance Requirements as part of a TRENMO-led multi-disciplinary due diligence team.

**ESDD — Istanbul Sefaköy–Beylikdüzü Metro (17.89 km, 10 stations)** — EBRD / AFD, 2023–2025

Environmental and social due diligence for a major Istanbul metro extension. Led ESDD sub-team within TRENMO consortium, applying EBRD 2019 E&S Policy and Performance Requirements.

**ESDD — Ankara Dikimevi–NATO Metro Line** — EBRD / AFD, 2022–2023

Due diligence for a new Ankara metro line. Environmental and social assessment conducted per EBRD 2019 standards as part of comprehensive technical and financial due diligence.

**ESDD — İzmir Buca Metro Line** — EBRD, 2020–2021

Environmental and social due diligence for a municipally owned metro system in Izmir, led by TRENMO consortium. Assessment aligned with EBRD 2019 E&S Performance Requirements.

**ESIA — Çanakkale 1915 Bridge & 90 km Approach Roads** — ERM / ÇOK A.Ş., 2016–2018

Project Director for the ESIA of one of the world's longest suspension bridges and its motorway approach roads. Work included gap analysis against EBRD/IFC standards, ecological and archaeological field surveys, regulatory reviews, impact assessment, and 13+ public consultation events.

**ESIA — Integrated Health Campuses (Bursa, Elaziğ, Adana, Istanbul Ikitelli)** — Rönesans / Meridiam, 2013–2017

Project Director for ESIA's across four major health campus PPP projects. Studies conducted to IFC, EBRD, EIB, and JBIC/NEXI standards; included baseline surveys, legal registers, stakeholder engagement, and lender coordination.

**ESIA — Gebze–İzmir Motorway & İzmit Bay Bridge (~400 km)** — Multinational JV, 2012–2015

Comprehensive ESIA for Europe's second longest bridge span and connecting motorway, meeting Turkish and IFC standards. Included ecology/archaeology field surveys, regulatory reviews, and stakeholder consultation.

**ESIA — Southstream Transport Offshore Natural Gas Pipeline** — South Stream Transport, 2012–2015

ESIA for approximately 470 km of offshore pipeline within Turkey's Black Sea Exclusive Economic Zone, in compliance with Turkish permitting requirements and international finance standards.

**EHS Due Diligence — BP Retail Stores Network (600 sites)** — BP, 2010–2016

Environmental risk assessment and soil/groundwater investigations across BP's full 600-site Turkish retail network. Developed risk-based assessment framework; averaging 20 Phase II assessments per year.

**Environmental Consultancy — Tüpraş Refineries (4 sites)** — Tüpraş, 2010–2014

Compliance management review, soil and groundwater investigation, waste management, and remediation for all four Tüpraş refineries across Turkey.

**ESDD — Multiple EBRD Assignments (Automotive, Utilities, Infrastructure)** — EBRD, 2012–2020

Directed and delivered over a dozen ESA/EHS due diligence assignments for EBRD across sectors including electrical distribution (OEDAS, TREDAS), automotive (Ford Otosan, Standard Profil), shipbuilding (Tersan), metro projects, and food service supply chains.

**STAR Aliğa Refinery — Environmental & Social Due Diligence** — SOCAR/Turcas, 2012

Environmental, health and safety regulatory and permitting support for the new Aliğa refinery during site preparation and construction phases. Research and compilation of relevant legal and engineering requirements applicable to site activities.

**EHS Due Diligence — Multinational Oil Company Exit from Turkey** — Multinational Oil Major, 2015

Vendor's due diligence for a multinational company exiting Turkey. Assessed environmental risks across ten oil and LPG terminals nationwide. Included regulatory compliance review, site visits, personnel interviews and Phase II site assessments.

**EHS Due Diligence — Natural Gas Extraction, Thrace Region** — Private Operator, 2015

EHS management review and due diligence for a natural gas extraction company's operations in Tekirdağ. Assessed compliance with Turkish environmental and safety legislation; reviewed environmental permits, production facilities, flowlines, gathering and processing stations, pipelines and well liquidation issues.

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**Soil & Groundwater Investigations — Petrol Ofisi Retail & Terminal Network — Petrol Ofisi / BP, 2014–2016**

Environmental risk assessment and soil/groundwater investigations for the Petrol Ofisi terminal and retail station network. Averaging 10 Phase II assessments per year at retail sites; four Phase II assessments at oil storage terminals.

**ESIA — Shell Upstream Turkey Oil & Gas Exploration (Dadas Formation) — Shell / TPAO, 2011–2012**

ESIA for early-stage oil and gas exploration and appraisal activities onshore in southeast Anatolia, in line with Equator Principles and IFC Performance Standards. Extensive site investigation for site selection based on environmental and social interaction criteria.

**Nabucco Natural Gas Pipeline — Environmental & Social Due Diligence — Multilateral Lenders (EBRD, EIB, IFC), 2010–2011**

Environmental advisor review of local EIA reports for the 3,300 km Nabucco pipeline (Eastern Turkey to Austria). Submitted findings to the Independent Environmental and Social Advisor to the multilateral lender group comprising EBRD, EIB, IFC and various Export Credit Agencies.

**ESDD — Hydroelectric Power Plant Portfolio, Turkey & Georgia — Two Private Investment Funds, 2013–2014**

Site visits and review of EIA reports, feasibility studies, ecosystem assessments, water rights reports and permitting documentation for a portfolio of hydro projects:

- 87 MW Paravani HEPP, S. Javakheti, Georgia (2014)
- 22.7 MW Regulator & HEPP, Kahramanmaraş (2014)
- 15.35 MW HEPP, Trabzon (2013/2014)
- 12.7 MW HEPP, Trabzon (2013) • 14.9 MW HEPP, Erzurum (2013)
- 15.5 MW HEPP, Ağrı (2013) • 9.16 MW HEPP, Trabzon (2014)
- 5.55 MW EPP, Ordu (2014) • 4.4 MW & 6.6 MW Regulator HEPPs, Ordu/Gümüşhane (2013)

**EHS Due Diligence — Electricity Distribution Privatisation (5 EDCs) — Private Energy Sector Investor, 2010 & 2012**

Assessed regulatory operating compliance status of five electricity distribution companies in the process of privatisation. Identified material non-compliance issues against Turkish environmental regulations and developed cost estimates for remediation measures.

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**CERTIFICATIONS & PROFESSIONAL TRAINING**

**NEBOSH International General Certificate in Occupational Health and Safety**

NEBOSH, London UK · 2021

**Business Sustainability Management Certificate**

University of Cambridge Institute for Sustainability Leadership (CISL) · 2017

**Social Accountability SA8000 Basic Auditor**

SAI — Social Accountability International, Istanbul · 2017

**ISO 14001:2004 Environmental Management System — Internal Auditor**

Istanbul · 2008

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**PROFESSIONAL ASSOCIATIONS & BOARD MEMBERSHIPS**

**American Society of Civil Engineers (ASCE)** *Member since 2014*

**International Association for Impact Assessment (IAIA)** *Member 2018 – Present*

**AVERE — The European Association for Electromobility** *President, Turkish Chapter · 2019 – Present*

**Energy Policy Research and Implementation Center (EPAM), Boğaziçi University** *Board Member · 2015 – Present*

**Enerji Ekonomi Derneği (EED)** *Board Member*

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**PUBLICATIONS**

**2026 — Book: İklim Değişikliği ile Uyumlu Sürdürülebilir Altyapı ,Sustainable Infrastructure Resilient to Climate Change Akademisyen Yayınevi <https://doi.org/10.37609/akya.4049>**

- Turp, M.T., An, N. and Avcı, C.. *İklim Değişikliği ve Altyapı Sektörlerine Genel Giriş (Introduction to Climate Change and Infrastructure Sectors)*
- Bilgin, B., Turp, M.T., An, N. and Avcı, C.. *İklim Dirençli Altyapıda SKA'ların Rolü (Role of SDGs in Climate-Resilient Infrastructure)*
- Avcı, C., An, N. and Turp, M.T.. *İklim Dirençli Altyapılarda Kamu ve Özel Sektör Yatırımlarının Rolü (Role of Public & Private Investment in Climate-Resilient Infrastructure)*
- Avcı, C., An, N. and Turp, M.T.. *İklim Dirençli Altyapı Tasarım Standartlarının Uygulanması (Implementing Climate-Resilient Infrastructure Design Standards)*
- An, N., Turp, M.T., Kurnaz, M.L. and Avcı, C.. *Türkiye'de İklim Değişikliği: Geçmişten Geleceğe Eğilimler, Projeksiyonlar ve Altyapı Sistemlerine Etkileri*
- Turp, M.T., An, N. and Avcı, C.. *Enerji Politikaları–İklim Politikaları (Energy Policy–Climate Policy)*
- Turp, M.T., An, N. and Avcı, C.. *Temel Altyapı Sektörlerinin İklim Değişikliğine Dirençli Hale Getirilmesi (Making Key Infrastructure Sectors Climate-Resilient)*

**Journal Papers & Articles**

[Journal Paper · 2026] Avcı, C.B.

**Cumulative Drawdown as a Primary State Variable: The Absement Method for Confined Aquifer Pumping-Test Analysis**

*Water* 18(10), 1143. <https://doi.org/10.3390/w18101143>

[Journal Paper · 2025] Avcı, B.C. and Atam, M. [Cited: 1]

**Climate Change Impact on Watershed Sustainability Index Assessment**

*Water* 17(20), 2923

[Journal Paper · 2025] Avcı, C.B. and Vanolya, M. [Cited: 5]

**Proposed Framework for Sustainable Flood Risk-Based Design, Construction and Rehabilitation of Culverts and Bridges Under Climate Change**

*Water* 17(11), 1663

[Journal Paper · 2023] Avcı, B.C., Kesgin, E., Atam, M., Tan, R.I. and Abdelkader, M. [Cited: 16]

**Short-term climate change influence on surface water quality impacts from agricultural activities**

*Environmental Science and Pollution Research* 30(38), 89581–89596

[Journal Paper · 2023] Avcı, B.C., Kesgin, E., Atam, M. and Tan, R.I. [Cited: 14]

**Spatial-temporal response of sediment loads to climate change and soil conservation practices in the Northern Aegean Watershed, Türkiye**

*Water* 15(13), 2461

[Journal Paper · 2023] Avcı, B.C., Kesgin, E., Atam, M. and Tan, R.I. [Cited: 11]

**Modelling agricultural practice impacts on surface water quality: Case of Northern Aegean watershed, Turkey**

*International Journal of Environmental Science and Technology* 20(5), 5265–5280

[Journal Paper · 2022] Karakan, İ., Gürkan, C. and Avcı, C. [Cited: 5]

**Performance analyses of mesh-based local Finite Element Method and meshless global RBF Collocation Method for solving Poisson and Stokes equations**

*Mathematics and Computers in Simulation* 197, 127–150

[Journal Paper · 2021] Kumbaroğlu, G.S., Çamlıbel, M.E. and Avcı, C. [Cited: 18]

**Techno-economic comparison of bifacial vs monofacial solar panels**

*Engineering Structures and Technologies* 13(1), 7–18

[Journal Paper · 2014] Avcı, C.B. and Sahin, A.U.

**Assessing radial transmissivity variation in heterogeneous aquifers using analytical techniques**

*Hydrological Processes* 28(23), 5739–5754. doi:10.1002/hyp.10064

[Journal Paper · 2012] Ciftci, E., Avcı, C.B., Borekci, O.S. and Sahin, A.U.

**Assessment of advective–dispersive contaminant transport in heterogeneous aquifers using a meshless method**

*Environmental Earth Sciences* 67, 2399–2409. doi:10.1007/s12665-012-1686-z

[Journal Paper · 2010] Avci, C.B., Ciftci, E. and Sahin, A.U.

**Identification of aquifer and well parameters from step-drawdown tests**

*Hydrogeology Journal* 18, 1591–1601. doi:10.1007/s10040-010-0620-2

## Book Chapters

[Book Chapter · 2023] Tiranlar, C. and Avci, C.

**Environmental valuation of the benefits of electric vehicles and their cost benefit analysis in developing countries in the case of Turkey**

*In: The Global Energy Transition Toward Decarbonization: a multi-scalar approach. Springer.*

[Book Chapter · 2015] Gultekin, I. and Avci, C.

**Environmental and Social Risk Management in Emerging Economies: An Analysis of Turkish Financial Institution Practices**

*In: Wendt, K. (ed.) Responsible Investment Banking. Springer-Verlag.*

[Book Chapter · 2008] Avci, C. and Guler, E.

**Environmental Impact Assessment Standards and Thresholds for Sanitary Landfills**

*In: Standards and Thresholds for Impact Assessment, pp.103–111. Springer-Verlag.*

## Conference Papers

[Conference Paper · 2025] Turp, M.T., An, N., Demiralay, Z., Avci, B.C. and Kurnaz, M.L.

**Projected Changes in the CORDEX-Central Asia's Precipitation Extremes Using the NEX-GDDP-CMIP6 Models**

*EGU General Assembly 2025, Vienna.*

[Conference Paper · 2023] Avci, C., Tiranlar, C., Akcan, İ. and Atam, M.

**Modelling Climate Change Impact on Hydroelectric Power Plant Energy Production**

*44th IAEE International Conference, Pathways to a Clean, Stable, and Sustainable Energy Future.*

[Conference Paper · 2023] Turp, M.T., An, N., Demiralay, Z., Avci, B.C. and Kurnaz, M.L.

**Analysis of Projected Changes in Seasonal Precipitation Amounts for Central Asia Using the CMIP6 Multi-Model Ensemble Approach**

*EGU General Assembly 2023, Vienna.*

[Conference Paper · 2022] Ioannou, G., Van Hummelen, S., Maillet, J., Sioshansi, F. and Avci, C.

**The New Pathways for a Sustainable Energy Transition (Plenary)**

*17th IAEE European Conference, The Future of Global Energy Systems.*

[Conference Paper · 2022] Üçtuğ, F.G., Avci, C. and Kumbaroğlu, G.

**Effect of Changing Turkey's Electricity Mix on Adapting the Steel Industry to the European Green Deal**

*43rd IAEE International Conference, Mapping the Energy Future.*

[Conference Paper · 2020] Komurcu, M., Susskind, J., Berger, A.M., Camlibel, M.E. and Avci, C.

**Building Resilient Cities through Climate-Aware Urban Design: A Case Study for Istanbul**

*American Meteorological Society Meeting Abstracts 100, 399.*

[Conference Paper · 2019] Tiranlar, C., Avci, B.C. and Kumbaroğlu, G.

**Analysis of CO<sub>2</sub> Emission Reduction and Energy Interactions in Turkey Via Genetic Algorithm and BUEMS-macro for Electric Vehicles**

*16th IAEE European Conference, Energy Challenges for the Next Decade, Ljubljana.*

[Conference Paper · 2015] Ozturk, Z., Kumbaroğlu, G., Avci, C. and Kucuk, M.

**Electricity Demand Projection for Turkey: Bottom-up Modelling Approach and Comparison with EU and Asia**

*38th IAEE International Conference, Antalya, May 2015.*

Full publication list: [www.cem-avci.com/publications](http://www.cem-avci.com/publications) · [Google Scholar profile available on request](#)