

5th EU- Arab World Summit – Maritime Borders in the Mediterranean: the Cradle of Civilization Deserves a Civilized Solution



**FOR TURKEY AND GREECE, SHARED
TRAGEDY COULD SAVE LIVES IN
THE LONG RUN**



By Roudi Baroudi

The deadly earthquake that struck Greece and Turkey on Friday has brought out the best in the two countries' leaders, who have exchanged not only condolences, but also offers of assistance.

Like other natural disasters, this one showed no regard for national borders. Most of the casualties and damage took place in the Turkish city of Izmir, but the epicenter was located beneath the seabed in Greek waters, and the two Greek youths who perished did so on the island of Samos, which lies less than 2 kilometers off the Turkish coast. Far from discriminating between the two neighbors, then, the quake was a (literally) jarring reminder that their fates are inextricably intertwined.

And yet, the mutual goodwill expressed by Turkish President Recep Tayyip Erdogan and Greek Prime Minister Kyriakos Mitsotakis owed most of its newsworthiness to the acrimony which has otherwise defined their relationship of late: most of their recent exchanges have involved accusations and even

thinly veiled threats over rival territorial claims at sea.

The dispute is not new, but in recent years its urgency has grown exponentially due to discoveries of enormous oil and (mostly) gas deposits in the Eastern Mediterranean. Far from eliciting offers to exchange resources and expertise – in a deepwater setting that will require massive upfront investment and world-class technical capabilities – the two sides have approached the matter as zero-sum game. Each is behaving as though any gains it achieves can only come by inflicting equal-size losses on the other, but given the realities of the dispute, nothing could be further from the truth.

Already, the mere fact of their having not progressed to negotiate a maritime border treaty – one allowing both parties to get on with the businesses of exploration and development in their respective zones, and perhaps in some joint areas as well – is costing a lot of money, and not just in terms of time lost to unnecessary delay. The absence of an agreement also means that whenever the Turks send their seismic research vessel, the Oruc Reis, to study the seabed in disputed waters, they also have to bear the cost of an armed escort. They may take solace in the fact that the Greeks are also paying heavily to monitor their activities, but there are no winners in such a contest. Both countries are only ensuring that whoever eventually finds, extracts, and sells the resources in question, the venture will have been less profitable than it should have been.

Similar obstacles apply to just about any scenario in which Athens and Ankara fail to delineate a mutually acceptable border and try to act unilaterally. Investors loath uncertainty, so any offshore blocks they auction off will fetch less money than they would if the dispute were settled. Underwriters are equally suspicious of oil and gas operations in potential war zones, which means that even if insurance can be obtained for ships, drilling rigs, and any other equipment, the price is likely to be exorbitant – and this is not to

mention the cost of liability coverage relating to life and limb, environmental consequences, etc.

Why would anyone opt for such a murky, risky, and uncertain venture when a much clearer, safer, and surer one is so close at hand? From any conventional business perspective, the far superior route is to negotiate a mutually beneficial solution that gives both parties the ability to make plans and implement them without fear of delay or interference.

A generation or two ago, there might have been an excuse for one or both countries to question the advisability of an early settlement, but not anymore: not when the United Nations Convention on the Law of the Sea (UNCLOS) sets out clear standards for the fair and equitable resolution of maritime boundary disputes; not when satellite imagery and data processing technologies allow virtually all nation-states to obtain high-precision maps ahead of time; not when we have such an extensive background of previous cases and established precedent to indicate in advance what an eventual settlement will look like.

If they have not already done so, both countries can commission a company like Fugro to carry out a Law of the Sea study and, within a few weeks, know within a few centimeters where their maritime boundaries should lie. If there are compelling reasons to alter the legal or data inputs that produce these results, they can negotiate swaps and/or designate certain areas for joint management or even shared sovereignty. Whatever the solution, it will be better than the bellicose rhetoric and high-seas brinkmanship on which they have recently relied.

Right now the priority has to be on search and rescue, saving any lives that can still be saved, taking care of those made homeless by the quake, and determining the full extent of the damage caused by the quake. Nothing should delay this process.

Once the danger has passed and the vulnerable have been secured, however, Greece and Turkey should follow their own example in this post-quake period by moving to defuse tensions and start talking about how to resolve their differences quickly, practically, and peacefully. Why waste any more time, expend any more resources, or risk any more lives when a negotiated solution is so easily obtainable?

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**ترسيم الحدود البحرية ينطلق
وبارودي لـ "النهار": الاجتهادات**

الدولية تساعدنا للحصول على كامل الحقوق



يشهد مقر "اليونيفيل" في الناقورة اليوم إنطلاق الجلسة الافتتاحية للمفاوضات بين الجانبين اللبناني والاسرائيلي حول الحدود البحرية، والتي يستضيفها المنسق الخاص للأمم المتحدة في لبنان يان كوبيتش في حضور الوفدين اللبناني والاسرائيلي. كما يشارك في الجلسة مساعد وزير الخارجية الأميركي لشؤون الشرق الأدنى ديفيد شنكر على ان ينضم اليها ايضا السفير جون ديروشر، الذي سيكون الوسيط الأميركي لهذه المفاوضات.

بعد انتظار دام اكثر من عشر سنين، ينتظر ان تبدأ مفاوضات ترسيم الحدود البحرية بين لبنان واسرائيل. وهذا المشهد في حال كتبت له نهاية سعيدة سيستفيد منه لبنان في مجالات اقتصادية ووطنية مختلفة. ولن تكون المفاوضات سهلة بل يمكن وصفها بالصعبة والجادة، هذا ما يؤكدّه الخبير الدولي في شؤون النفط والغاز رودي بارودي في حديث لـ"النهار"، مشدداً على "ضرورة التفاف الجميع حول الوفد اللبناني" الذي يضم العميد الركن الطيار بسام ياسين رئيساً، العقيد الركن البحري مازن بصبوص، عضو هيئة ادارة قطاع البترول وسام شباط، والخبير في القانون الدولي نجيب مسيحي الذي يعمل مع قيادة الجيش في المواضيع المتعلقة بالخرائط. المطلوب هو تأمين الدعم الكامل للجيش اللبناني في هذه المفاوضات، خصوصاً ان التوصل الى اتفاق سيكون انتصاراً لكل اللبنانيين كونه يؤدي حتماً الى تسريع الاستفادة من الثروات النفطية والغازية الكامنة في عمق البحر، كما يسهل التفاوض مع الجانب القبرصي للتوصل إلى اتفاق نهائي معه أيضاً.

ويعتبر بارودي ان "الجهود التي بذلها رئيس مجلس النواب نبيه بري طوال السنوات الماضية لوضع اطار صلب للمفاوضات هو جهد اساسي وله اثر ايجابي على لبنان، وبالتالي فإن اي جدل حول ما قام به الرئيس بري لن يساعد في المفاوضات بل على العكس سوف يحرم لبنان اوراقا رابحة هو بأمس الحاجة اليها".

ويضيف ان "الحل السلمي سواء عبر المفاوضات المباشرة او غير المباشرة، كما هي الحال بين لبنان واسرائيل، للنزاعات الحدودية البحرية يساعد البلدان الساحلية على الاستفادة من الموارد البحرية"، لافتا إلى أن "أدوات الحل بسيطة ومتاحة بسهولة وهناك سوابق واجتهادات كثيرة تدل على ذلك". ويشير الى دور للولايات المتحدة الأميركية في هذا المجال، ويقول إنه "نظرا الى حال الحرب بين لبنان واسرائيل لعبت الادارة الاميركية دورا كبيرا طوال السنوات الماضية لوضع اطار ناجح ومفيد للبدء بالمفاوضات، خصوصا انها الدولة الوحيدة التي تستطيع ان تكون صلة وصل بين الطرفين"، مشددا على الدور الاساسي للأمم المتحدة، ومعتبرا أنه "في المسائل المشابهة تتبنى الحكومات المعنية بشكل كلي المبدأ الاساسي للأمم المتحدة والنظام الدولي برمته والذي تم العمل عليه منذ الحرب العالمية الثانية: أي الحل السلمي للنزاعات. بمجرد اقرار هذا المبدأ سيكون هناك مزيج منطقي من القانون والعلوم والتكنولوجيا يجعل ترسيم الحدود ولا سيما منها البحرية عملية بسيطة وسهلة يستفيد منها جميع الأطراف. فاتفاقية الأمم المتحدة لقانون البحار وتأثيرها المتزايد جعل من قواعدها ومعاييرها أساسا لجميع المفاوضات والاتفاقات البحرية، كما ان التقدم الذي أحرز أخيرا في مجال العلم والتكنولوجيا لا سيما مجال رسم الخرائط الدقيقة، وسع نطاق المبادئ التوجيهية لاتفاقية الأمم المتحدة لقانون البحار لايجاد تسوية للنزاعات التي تستند إليها". وفي هذا السياق، يؤكد بارودي انه "عند اتباع الدول الساحلية المبادئ والممارسات المنصوص عليها في اتفاقية الأمم المتحدة لقانون البحار، فعليها ان تلتزم أيضا قواعد وأنظمة محددة وان تستند إلى الجوانب العلمية والقانونية لتنفيذ هذه الإجراءات بموجب المبادئ التوجيهية الرسمية المحددة من قبل الأمم المتحدة".

تفاصيل تقنية...

انطلاقا من هذا الواقع وبالعودة الى ترسيم الحدود البحرية بين لبنان واسرائيل، يلاحظ بارودي ان لبنان "اعتمد من اجل البدء بالترسيم 61 مترا في البحر بدءا من نقطة رأس الناقورة، بينما اعتمدت اسرائيل 37 مترا في البحر، فعلميا كلاهما خطأ في البدء بالترسيم من خط بحري offshore اذ عليهما اعتماد خط الناقورة البري (LT) الفاصل بين البلدين". وفي حال رفضت اسرائيل الاعتراف بحقوق لبنان فان الاجتهادات الدولية تعطي لبنان حقه الكامل، خصوصا اذا ما اعتمد الوفد المفاوض على النقاط الآتية:

القضايا المماثلة في التجارب السابقة التي ارتكزت على القانون

الدولي، وتؤكد ان لبنان سيُمنحُ معظم حقوقه، ومن القضايا التي اصدرت محكمة العدل الدولية أحكاما بها: قرار محكمة العدل الدولية في قضية ميانمار ضد بنغلادش (12 آذار 2012).

قرار محكمة العدل الدولية في قضية ليبيا ضد تونس (24 شباط 1982).
قرار محكمة العدل الدولية في قضية نيكاراغوا ضد هندوراس (8 تشرين الاول 2007).

مما لا شك فيه ان هذه الاجتهادات تعطي الجيش اللبناني الحجة القانونية والحق الكامل للمطالبة بترسيم الحدود البحرية وفقا للمصالح والحقوق اللبنانية".

ومن المؤكد أن القرارات لا تقيم وزنا للجزر الصغيرة في أي معادلة، ولا تعتبر قادرة على دفع أو ازاحة أي خط بحري واحد مقابل الخط الآخر وفقا لاجتهادات محكمة العدل الدولية، فكما هو واضح في الخريطة المرفقة، فإن الصخور والجزر الصغيرة لا تؤخذ في الاعتبار عند ترسيم الحدود، بحسب بارودي، وهذا ما اكده ايضا بيان لقيادة الجيش بان المفاوضات لن تعطي اهمية لهذه الصخور من اجل ترسيم الحدود. أما الخط المشترك الجانبي الذي لدى لبنان مع إسرائيل ويقارب 71 ميلا بحريا، فبمجرد أن ينتهي النزاع الحدودي البحري مع إسرائيل، سيتعزز تلقائياً موقف لبنان لناحية توقيع اتفاق نهائي لترسيم الحدود بين لبنان وقبرص والتي تبلغ حوالى 96 ميلا بحرياً، وبين لبنان وسوريا.

يؤكد بارودي في حديثه ان ترسيم الحدود اللبنانية "سيعزز فرص لبنان الاقتصادية، اذ ان الاكتشافات الأخيرة اكدت وجود كميات كبيرة من النفط والغاز، أما في حال عدم اعتماد الحل العادل والمنصف فسوف يؤدي ذلك ليس إلى إبطاء تنمية الموارد فحسب، بل سيزيد خطر وقوع حرب نحن في غنى عنها". وفي توضيحه لمنافع نجاح الترسيم واستغلال الثروات يقول: "ان الدول التي ستنتج الغاز ستعرف عائدات كبيرة من الإنتاج والصادرات، وحتى الدول غير المنتجة ستستفيد من استضافة مرافق المعالجة أو النقل، وفي أفضل السيناريوات، قد تنضم البلدان الأكثر حظاً إلى خطة إقليمية لتقاسم العائدات، وستسمح هذه التحسينات المالية باستثمارات طال انتظارها في التعليم والرعاية الصحية والنقل والبيئة والمياه النظيفة والحد من الفقر اضافة الى استقرار سياسي".

ويتمنى بارودي النجاح للوفد المفاوض وأن يعيد الى لبنان حقوقه المعترف بها دولياً، خصوصاً ان الوضع الاقتصادي الضاغط على اللبنانيين قد يعرف تحولا ايجابيا في حال استطاع لبنان ترسيم حدوده واقناع شركات النفط العالمية بانه بات يؤمّن بيئة آمنة لكي تتمكن من العمل واستكشاف ثرواته النفطية البحرية كما هي حال معظم الدول المجاورة.

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بارودي يشدّد على التسوية السلميّة لحل النزاع على مياه شرق المتوسط

تحت عنوان "شرق المتوسط مياه هادئة، مشتعلة، جامدة"، تحدّث الخبير في شؤون الطاقة رودي بارودي على قناة "الجزيرة" عبر تقنية الفيديو، عن العوامل التي تدعو الأفرقاء في شرق المتوسط إلى التعاون وتسوية النزاعات، فأكد توفّر الحلول السلمية للنزاعات حول الحدود البحرية، وأشار إلى أن "الولايات المتحدة قبل 75 سنة وبقيّة النظام الدولي الذي تم تأسيسه بعد الحرب العالمية الثانية ونظام الأمم المتحدة، كله تم تصميمه من أجل جعل النزاعات المسلحة شيئاً من الماضي وتنظيم العلاقات ما بين الدول... إذاً الدول قد تدخل في فرضيّة عدم اتفاق لكن من دون السقوط في عمليات العنف بين الدول. لذلك هناك اتفاقات ومعاهدات من أجل السلم والأمن الجماعي"، مؤكداً أن "الأطراف كافة تتقيّد بكل الالتزامات القائمة من أجل حل نزاعاتها بشكل سلمي".

وقال في السياق: اليونان وتركيا دولتان جارتان ولديهما الكثير من النقاط المشتركة، كما تعانيان من النزاعات القائمة، أما الأراضي التي جرى الحديث عنها، قد تكون تغيّرت بسبب اتفاقات عدة كاتفاقية جنيف، وكذلك بعض المجموعات السكانية ربما تم منعها...

وأضاف: الأمور ليست مثالية، فالنظم القائمة في العالم فيها الكثير من نقاط الضعف لكن الوضع هو أفضل بكثير مما كان عليه تاريخياً عندما ننظر إلى الماضي حيث أن الغلبة للأقوى عندما يستغل القوي الضعيف، لذلك هذا النظام موجود لأننا نريد حل هذه المشاكل، لكنه الالتزام به ليس بالطريقة المطلوبة.

وأوضح أن "المشكلات والنزاعات المتعلقة بالحدود البحرية طالما كوّنّت إشكالية خصوصاً أن ليس هناك حكومة تريد النظر إليها على أن تتخلّى عن أي جزء من أراضيها والتي ينظر إليها الشعب على أنها جزء من أراضيهم. من هنا، بإمكان الخبراء والمختصين بالخرائط أن

يلتقوا سوياً للنظر إلى مثل هذه الأمور ويتفقوا على المكان الذي يتم فيه رسم هذه الحدود".

وأشار إلى أن الحدود البحرية هي أكثر تعقيداً وتبدأ من الحدود البرية، وقال: الأمم المتحدة طوّرت آلية لحل هذه النزاعات المتعلقة بمثل هذه القضايا وكل من تركيا واليونان والدول الأخرى كانت حاضرة، البعض وقّع والبعض الآخر لن يوقّع، وتتضمّن قواعدَ بكيفية ترسيم الحدود البحرية والجرف القاري والحدود الأخرى. وغالبية الأعضاء في الأمم المتحدة والدول المنضوية وقّعت وصادقت على هذه الاتفاقية حتى في حالات تم حلّها بأطر غير ثنائية أو معاهدات، فإن المبادئ ذاتها تنطبق على هذه الدول.

وذكر بأن "النزاعات الجارية والتي تم النظر فيها إما مع محكمة العدل الدولية أو من خلال غرف التحكيم، كلها تركّز على المعايير والمبادئ المتعلقة باتفاقية قانون البحار، بما في ذلك على الدول التي ليست طرفاً في هذه الاتفاقية".

وتابع بارودي: عندما يتعرّف الناس على هذه الاتفاقية، يقولون "إذا كان الأمر كذلك، لماذا لم يصادق العالم على هذه الاتفاقية؟ ولماذا لم يتم تعريف كل الحدود؟"، الجواب على هذا السؤال المهم، أن السبب الأساسي هو أن تكنولوجيا التقاط الصور والحوسبة عالجت كل المخالفات المتعلقة بها هذه الاتفاقية والدراسات التي بُنيت عليها، حتى أن هذه القدرات والإمكانات كانت مكلفة بالنسبة إلى الجميع، لكنها كانت متاحة للحكومات الثريّة.

وعن القوى لاتي تملك التأثير في دفع الأفرقاء المتنازعة إلى تسوية الخلافات ما بينها، قال: هناك 21 دولة في منطقة المتوسط الأوروبي وكلنا نستحق أن نعيش بسلام، فقد سئمنا الحروب... ويجب التفكير ما هو الأفضل بالنسبة إلى شعوبنا وأجيالنا وأطفالنا. على الأقل إن لم نتمكن من الاجتماع سوياً، فالولايات المتحدة مستعدة بالتأكيد للمساعدة وكذلك الاتحاد الأوروبي، والأمم المتحدة، وكذلك المملكة المتحدة بما أنها خرجت من الاتحاد الأوروبي فتستطيع بالتالي لعب دور الوسيط الحيادي، ولكن الأهم هو احترام القانون.

الأمر الأهم هو أن الأقوى لا يحترم القانون وعلى سبيل المثال إسرائيل. جلّ ما في الأمر أن علينا أن نتحاور بعيداً من السياسة. لنترك للسياسيين النزاع... ولنندع الشعوب تعيش، ولنندع اقتصاد عمق البحار الذي يمكنه إنقاذ الشعوب. فهم بأمرّ الحاجة إلى أنظمة

الرعاية الصحية والتعليم والأمن والكهرباء والهاتف بأسعار مقبولة ولتتركنا الدول الأجنبية في حالنا. يجب أن نعمل من أجل السلام ولدينا الآليات الضرورية اللازمة، وعلى سبيل المثال إن تركيا واليونان لديهما كل العلماء والخبراء وأفضل الدكاترة أصحاب الخبرة كي يجلسوا ويتصافحوا ويتوصلوا إلى اتفاق، خصوصاً أن أبناء الدولتين عاشوا داخل أراضي بعضهما البعض لسنوات، لماذا لا يقدرّون الآن على تكرار التجربة.

وعن ترسيم الحدود بين لبنان وإسرائيل، قال بارودي: لسوء الحظ، مرّت الدولة اللبنانية بمطبات وحروب... إلخ، وصدر عن مجلس الأمن ما يُسمّى الخط الأزرق وهو لا يصل إلى المنطقة البحرية... هناك منطقة نزاع تمتد على 872 كلم² بحسب العلماء والخبراء، ووفق قرارات الأمم المتحدة يحصل لبنان على ما لا يقل عن الثلثين، لأن إسرائيل استخدمت بعض الصخور وقامت باحتساب بعض حدوده البحرية. والولايات المتحدة مستعدة لمساعدتنا في هذا الموضوع، وتريد اعتماد الوساطة الجيدة، الأمر الذي يساهم في حل المشكلة.

ولفت إلى أن الـ"بلوك 9" غني بالموارد "ويساعدنا على العيش بسلام ومن شأنه أن يقضي على الفقر".

وعن شكل التسوية التي تراعي موازين القوى ومصالح مختلف الأطراف في شرق المتوسط، قال: حين تُحل المشكلة بين تركيا واليونان ينسحب بالطريقة نفسها على قبرص بجزءٍ منها، وتتوحد الجزيرة.

وختم: إذا كان شرق المتوسط يعيش بسلام بدون أي نزاعات أو عنف، فقبرص قريبة جداً من الساحل التركي... المطلوب النضج واحترام القانون والتناغم من أجل إبعاد الحرب، هذا كل ما نحتاج إليه.

**Oil recovery waits for
international flying to**

return



Jet fuel consumption remains the hardest-hit section of the global oil market as passengers avoid air travel because of the pandemic and government travel restrictions.

The specific problems of the jet market explain why refinery margins for closely related distillates such as diesel are being hit much harder than benchmark oil prices.

Jet fuel's travails have helped push distillate margins to their lowest levels for more than a decade and are undercutting refinery demand for crude.

Sustained recovery in distillate margins and crude oil prices will therefore depend on a wider resumption of cross-border aviation.

But an early resumption of long-haul flights is looking less likely than a few months ago, given the resurgence of coronavirus cases in many parts of the world.

So an upturn in jet consumption, and with it distillate margins and crude oil prices, depends on one or more of three

factors: early deployment of an effective COVID-19 vaccine; alternative methods of infection control (such as rapid testing or improved contact tracing and isolation); or lifting air travel restrictions with or without a vaccine.

Quarantines and other infection controls have mostly been imposed on a national or occasionally continental basis, and on potentially infective passengers rather than manufactured products.

As a result, passenger aviation has been hit much harder than freight, and within the passenger sector, long-haul intercontinental flights have been more severely affected than short-haul and domestic services.

Domestic markets rebound

Globally, air freight tonne-kilometres were down just 18 per cent in June compared with passenger revenue-kilometres down 87 per cent, according to the International Civil Aviation Organisation.

In Hong Kong, which has adopted some of the strictest quarantine requirements, air cargo volumes were down just 2 per cent in August from a year earlier while passenger numbers, excluding transit passengers, were down 99 per cent.

On the passenger side, countries with a large domestic market, including the United States and China, have seen a stronger rebound than countries that depend on international departures and arrivals such as Britain.

China's passenger aviation volume was down by about 40 per cent in August compared with the same month a year earlier, based on passenger-kilometres flown, according to the National Bureau of Statistics.

By contrast, Heathrow airport reported passenger numbers were down by 69 per cent in August for domestic and short-haul

flights within Europe, and down by 92 per cent for long-haul flights outside Europe.

Business-related travel has been hit harder than leisure journeys as a result of the cancellation of conferences and in-person customer visits.

Most aviation experts expect business travel to recover more slowly than leisure journeys over the next 12 to 24 months, mirroring the experience after previous business cycle downturns.

The recession's lingering effects will encourage corporate managers to focus on cost control even once coronavirus restrictions are lifted, and discouraging discretionary flights is the easiest target for short-term savings.

Jet fuel consumption takes off

Global jet fuel consumption was about 8 million barrels a day in 2019, or about 8 per cent of global petroleum consumption, according to BP.

But it has been one of the fastest-growing sections of the market over the past decade, with consumption growing by almost 2.7 per cent a year between 2009 and 2019, compared with 1.6 per cent for all petroleum products.

While jet consumption remains a relatively small component of the total petroleum market, it is much larger compared with the market for other similar middle distillates.

In 2019, jet fuel accounted for 22 per cent of worldwide consumption of middle distillates, a group of fuels which also includes diesel, heating oil, gasoil and kerosene, and totalled about 36 million barrels a day.

The pandemic-driven slump in aviation, especially fuel-hungry long-haul passenger aviation, has cut jet consumption by more

than half.

Even with its domestic market, jet fuel consumption in the US is still down by more than 55 per cent compared with levels from a year ago, according to weekly estimates from the US Energy Information Administration.

Jet fuel, with strict quality specifications, is normally a premium product and makes a big contribution to refinery margins and profitability.

Following the pandemic, however, refiners have been forced to dump unwanted jet fuel into the broader and less-profitable pool for other middle distillates.

The diversion of surplus jet fuel has contributed to oversupply and bloated stocks of other middle distillates and is weighing on refining margins.

In turn, oversupply of distillates and poor margins are incentivising refineries to limit their crude purchases and processing, holding back wider recovery in the oil market.

**Countries seen needing to
invest \$55tn to reach
emissions target**



Global economies will need to invest as much as \$55tn through the middle of the century to meet an emissions goal and contain warming of the planet, according to a report by a group of executives from energy-intensive companies including ArcelorMittal SA, BP Plc and Royal Dutch Shell Plc. Reaching the net-zero carbon emissions target by 2050 will require large-scale electrification of industries, buildings, and transport, as well as the use of hydrogen and biofuels in areas that can't be electrified, according to the Energy Transitions Commission. Using less energy to produce more and recycling material will aid the efforts. Building renewable power plants will take up a bulk of the estimated investment.

More frequent and severe natural calamities across the world have heightened the need to contain climate change and end the use of coal and other fossil fuels while expanding clean energy. That's forcing some of the biggest fossil fuel users to recast their energy mix and adopt greener sources of power. The Intergovernmental Panel on Climate Change said in a 2018 report that reaching net-zero CO₂ emissions by mid-century will be key to limiting global warming to 1.5 degrees Celsius above pre-industrial levels. Humanity is on course to miss that mark, with the World Meteorological Organization saying

there is a 20% chance that global temperatures will breach the limit in at least one of the next five years. The decarbonization strategy will involve phasing out of coal-fired plants, according to the report. Those that remain should be used as a peaking or a seasonal back-up to renewable power and should be retrofitted with carbon capture and storage. The report highlighted some challenges on the way. China, the world's biggest coal user, "is not yet on a clear path towards a net-zero economy and new coal investments are continuing despite evidence that renewables are now highly competitive on a new-build basis in most of China's provinces," it said. The nation can become a fully developed, rich economy with net-zero emissions by 2050 by rapidly deploying renewable power projects and reducing its dependence on coal, according to the report. The country needs to double annual investments in solar and as much as quadruple investments in wind energy, along with accelerating the use of clean energy in industries and residential heating. India, the second-biggest coal user, is likely to see consumption of the fuel peak between 2027 and 2030, before gradually sliding down, Ajay Mathur, a co-chair at Energy Transitions Commission, said in a phone interview.

Iraq's rising crude sales signal further lag on Opec+ quota



Bloomberg/London

Iraq is exporting more crude so far in September than it shipped last month, a sign that the country is falling further behind in efforts to comply with its Opec+ production limit.

A long-time laggard, Iraq already owes its partners in the producers' group compensation cuts to make up for pumping too much in past months. With these extra reductions that Iraq promised for August and September, its production goal would be about 3.4mn barrels a day.

In the first 15 days of September, Iraqi exports alone reached 3.26mn barrels a day, 8% higher than last month's daily average, according to tanker tracking data compiled by Bloomberg. Adding as much as 650,000 barrels a day of crude to account for Iraqi refinery use would put Opec's second-biggest producer well over its production limit.

Sixty years on from its founding, the Organization of Petroleum Exporting Countries is restricting output with other major producers to try to revive the oil market from the Covid-19 demand crisis. Leaders of the Opec+ coalition were chairing a monitoring meeting yesterday to make sure group members toe the line, so the timing of data suggested rising exports from Iraq is awkward.

Earlier this month, Iraq said it might need more time to implement its promised additional production cuts.

Iraq pumped 3.72mn barrels a day in August, according to a Bloomberg survey. Iraq's oil ministry and its state oil marketer didn't immediately respond to requests for comment.

Crude prices have slipped since the end of August on concern that coronavirus flare-ups will slow a recovery in demand and that Opec+ compliance may be slipping.

Opec was already facing compliance questions concerning the UAE, which pumped at least 100,000 barrels a day more than it should have in August. Tanker tracking can shed light on how much oil a country is producing. However, countries may sell barrels from storage, and those don't count toward output limits. Producers also sometimes mix other petroleum products into the crude they ship, inflating their export numbers.

The daily average provided by preliminary tanker tracking may also change over the month because shipments are not always spread uniformly over the period.

After reviving crude prices from an unprecedented collapse over the spring, Opec+ is seeing the recovery stall and fuel demand falter as the deadly pandemic surges once again.

The peak holiday driving season has passed in the US, yet rush-hour traffic is still sparse and crude inventories stubbornly high. In India, the third-biggest consumer, transport-fuel sales remained 20% below year-ago levels last month. Even in China, where refiners binged on crude at the height of the crisis, buying has slowed.

As OPEC+ meets this week, UAE

emerges as main laggard



LONDON/DUBAI (Reuters) – The United Arab Emirates has emerged as a major laggard in delivering oil output cuts in August, figures used by OPEC+ showed on Wednesday, as the group meets this week amid signs of a faltering demand recovery.

Compliance with oil production cuts in August among OPEC+ members was seen at around 101%, four OPEC+ sources told Reuters on Wednesday, a figure calculated using production assessments from six secondary sources.

Several of the secondary sources showed the UAE missed its target in August, with the International Energy Agency (IEA) giving OPEC's third-largest producer a score of only 10%, significantly lower than an average of around 80% from other sources.

The UAE had said its overproduction was due to higher demand for associated gas for power generation, driven by hot weather and more people ditching foreign holidays, adding that it will compensate for the August rise by reducing its oil supply in

the coming months.

Abu Dhabi National Oil Company (ADNOC) will reduce crude oil supplies to term buyers in October and November.

A technical committee of the alliance of the Organization of the Petroleum Exporting Countries and its allies, known as OPEC+, meets on Wednesday to discuss market fundamentals and compliance.

One of the OPEC+ sources said the UAE will submit its plan to compensate for its overproduction in August.

Secondary source data including from the IEA, price reporting agencies S&P Global Platts and Argus Media, and publication Energy Intelligence have shown that laggards Iraq and Nigeria have by and large made efforts in August to compensate for their overproduction.

A higher-level ministerial monitoring committee meets on Thursday, and is unlikely to announce recommendations for expanding the oil cuts – currently at 7.7 million bpd until the end of the year – any further, sources told Reuters this week.

The meeting, instead, is expected to extend the compensation period for countries such as Iraq and Nigeria for their past overproduction, and discuss underperformance from other members, including the UAE.

The meetings come against the backdrop of worsening demand forecasts, including from OPEC.

In its monthly report, the organisation said it expected world oil demand to fall by 9.46 million barrels per day (bpd) this year, more than the 9.06 million bpd decline expected a month ago. [OPEC/M]

The OPEC forecast chimes with a worsening demand outlook outlined by the International Energy Agency and major oil

industry producers and traders.

BP Clean Energy Push Starts With 5-Year Dash on Solar, Wind



BP Plc's journey from oil major to clean energy giant will start with a five-year sprint to dramatically boost wind and solar power.

By 2025, the company intends to have approved more than 20 gigawatts of renewable energy projects, an eightfold increase from 2019, Dev Sanyal, BP's executive vice president of gas and low-carbon energy, said in a online presentation on Tuesday.

Most of that would be solar – putting BP on a par with today's biggest generator of electricity from the sun. The company also plans big investments in wind, following on from last week's \$1.1 billion deal with Equinor ASA.

"With falling costs comes real growth," Sanyal said. "Renewables have become the fastest growing source of energy and we see this continuing over the next decade and beyond."

This rapid expansion would just be the start of the London-based oil giant's transformation into a low-carbon integrated energy company. Chief Executive Officer Bernard Looney has pledged to eliminate all net greenhouse gas emissions from BP and its customers by 2050.

A series of presentations this week aims to show he can achieve this while still delivering competitive returns. Investors may need some convincing, after seeing their dividends cut in half last month.

Trading Gains

BP's in-house trading operations are at the heart of Looney's pledge to move away from fossil fuels without sacrificing profits. Renewable energy projects typically gives returns of 5% to 6%, Looney said, but the company's expert traders can add about 2 percentage points to that.

Lightsource BP, which currently manages about 2 gigawatts of solar plants, is already achieving returns of 8% to 10% and "we actually believe it can do better," Looney said. Access to low-cost funds, and integration with the rest of BP and its project management experience can boost returns, said Sanyal and Looney.

BP will gradually expand its electricity trading over the next five years, increasing the amount of power it buys and sells annually by about 40% to 350 terawatt hours.

Of the 20 gigawatts of renewable energy capacity BP intends to begin developing over the next five years, 83% will be solar, 15% wind and 2% bio-energy, Sanyal said.

That much solar would give BP about the same capacity as is currently owned by the world's biggest operator, China's State Power Investment Corp. Ltd, according to data from BloombergNEF.

Solar power will be crucial for achieving the breakneck pace of growth BP laid out. It is relatively quick to install, taking as little as 18 months from concept to construction, Sanyal said. That's much faster than massive offshore wind farms, which can take a decade to plan and construct.

By 2030, BP plans to have taken the final investment decision on 50 gigawatts of low-carbon energy capacity, and be trading 500 terawatt hours of power each year.

On bio-energy, the company says it will more than double its 2019 production to 50,000 barrels a day by 2025, and 100,000 by 2030. These fuels will help sectors that are hard to electrify, like aviation, marine and heavy goods vehicles, Sanyal said.

BP currently makes biofuels in a joint venture with Bunge Ltd. in Brazil, produces biogas in the U.S. and processes some renewable fuels within its refining portfolio.

"We see these businesses as generating returns of around 15% or higher," Sanyal said. "It competes well within our disciplined financial framework."

The Solar-Powered Future Is Being Assembled in China



On a recent morning in central China, workers in blue jumpsuits and white masks placed clamps around a bar of shiny metal and fed it into a powerful cutting machine. The bar was an ingot made of polysilicon, a heavily refined cousin of the same material that makes up sand. Inside the cutter, it was sliced into thousands of small squares slightly larger than a CD case and thinner than a thumbnail. These wafers would then be shipped on to other factories to be infused with conductive elements such as phosphorous and boron, then wired into cells and assembled into panels—the base unit of solar energy generation.

The owner of this factory, Longi Green Energy Technology Co., is the world's largest producer of solar wafers and the world's largest solar company by market value. As of the end of last year it created about 1 of every 4 wafers made anywhere on the planet, and since then it's announced at least five projects to expand its factories or build new ones. Despite a pandemic that may slow the growth of new solar power

installations for the first time in decades, Longi expects its production capacity by the end of 2020 to have increased by two-thirds compared with 2019.

Longi and the other Chinese companies that dominate solar—collectively they control at least 60% of global capacity for every step in the supply chain—are playing a risky game. The short history of the solar industry is a tale of repeated boom and bust, with abrupt technological and policy developments rendering multibillion-dollar investments obsolete. Industry leaders one day have, again and again, become bankruptcy filers the next.

The bet in China is that this time is different. Plunging costs have left solar the cheapest form of energy in parts of the world. Subsidies are disappearing as it becomes more competitive with other forms of electric generation, making demand less dependent on political decisions. And advances in energy storage are opening a tantalizing possibility: that solar could, in the near future, replace fossil fuels in many places. “We believe the solar market will maintain the trend of rapid growth,” says Li Zhenguo, Longi’s billionaire president. A physicist by training, he founded the company in 2000, naming it for a university principal who’d impressed Li with his academic rigor. “Current global production capacity, including Longi’s, is nowhere near enough to meet the coming demand.”

Longi dates to a time when Chinese solar manufacturers were relying primarily on cheap labor to undercut more established players from the U.S. and Europe. That strategy can collapse once wages rise, as they have in China. But, in Li’s telling, Longi was focused on coming up with a product that could compete in the longer term.

That aim led the company to make a momentous choice early on. There are two ways to make the blocks that solar wafers are sliced from: by cooling molten silicon into one homogeneous

structure or encouraging it to crystallize from different points. The first approach, known as mono-crystalline, provides greater conductivity and efficiency. But it's more expensive than multi-crystalline products, which most manufacturers favored in their efforts to compete with cheap fossil fuel generation.

Li decided that Longi, which in its early years relied on other companies to turn its wafers into cells and panels, would focus on mono fabrication, even if it meant losing out on short-term sales to less-expensive producers. For a long time the choice was eccentric; as recently as 2014, mono made up only 20% of the market. But around that time, China began to heavily subsidize solar installations, turbocharging demand and providing manufacturers with an incentive to compete on technology, not just cost. As its clout grew, Longi expanded vertically, and now it competes in nearly every part of the supply chain. The subsidies "transfused blood to the manufacturing sector," says Yali Jiang, a BloombergNEF analyst in Hong Kong.

It's now clear that Longi's bet paid off. Li estimates mono will account for 90% of the market in 2020—a development that's helped the company establish a commanding position. Part of the explanation is that, as costs have fallen, planners have placed a higher priority on mono's superior efficiency. This preference is reflected in Longi's \$37 billion market capitalization on the Shanghai stock exchange, by far the highest of any solar company. Its success, Li says, came from picking a technological horse early, sticking with it, and "looking for measures to rapidly put it into production."

As dominant as Longi might appear, no one stays on top of the solar industry for long. Yingli Green Energy Holding Co. was the world's biggest maker of solar panels as recently as 2013, but aggressive borrowing to fund new production combined with a plunge in solar equipment prices drove it to the brink of

collapse. In all, about 180 solar manufacturers have exited the industry or gone bankrupt in the past four years, according to Jiang.

Longi is trying to avoid their fate by not overextending itself financially. It's managed to keep a lid on labor costs by boosting productivity, sometimes at the cost of the so-called green jobs that politicians in China and the West love to promote. At a wafer plant not far from Longi's headquarters in the ancient imperial capital of Xi'an, producing 350 megawatts' worth of product required about 1,000 people in 2010. Today its output is equivalent to 6,000 megawatts, with the same number of employees. At a nearby panel plant, the company's smallest, only 100 or so workers are needed to operate a facility the size of 10 basketball courts. During a recent visit, the company was testing a packaging system that could allow it to get rid of forklift drivers and other logistical staff.

Cost-cutting can't fully neutralize the other major threat to China's solar industry: politics. The U.S. and European Union have periodically targeted Chinese manufacturers with anti-dumping tariffs since the early 2010s, claiming that subsidies allow them to sell below cost. The U.S.-China trade war kicked off in 2018 with duties on panels, and India, which is trying to reduce the economic influence of its giant neighbor, recently extended tariffs that had been set to expire on Chinese solar products.

China's solar industry is nonetheless growing rapidly. According to BloombergNEF data, at the end of 2019 Chinese panel factories had an annual capacity of 193 gigawatts, 60% more than was installed worldwide in that year. Planned expansions could increase that total by more than half.

There's an argument to be made that Chinese solar leadership is at worst benign and at best a source of considerable innovation. The raw materials for panels are inexpensive and

abundant, and it would be easy for companies in places such as Malaysia and Vietnam to set up factories if Chinese producers raised prices. The hothouse atmosphere of China's industry, meanwhile, has encouraged manufacturers to drive down costs. Measured per watt of output, the average price of panels has plunged 91% since 2010.

Solar optimists believe developments such as these might leave the world on the verge of an inflection point. In many places, generating electricity from the sun is now significantly less expensive than doing so from coal or natural gas. (Picking a location with sunny weather, as well as cheap land and financing, helps a lot, too.)

There's also been significant progress on the technology's biggest problem: that it can only generate electricity when the sun is out. When solar was primarily a supplement to traditional power plants, that wasn't a major concern, because power demand tends to peak in daytime. But it becomes a serious constraint as more panels are installed, creating a daytime surplus that's not useful at night. Engineers are refining a huge range of storage technologies, from improved batteries to "pumped storage" systems, which use solar electricity to send water uphill during daylight hours, releasing it through turbines when needed.

None has yet emerged as a game-changing solution, but Li is bullish on batteries, and he expects that a combination of live generation and storage will be enough to replace fossil fuels around the clock in at least some locations within a decade. He predicts that demand for solar installations will triple by 2025, to 300 gigawatts a year, before hitting 1,000 gigawatts in 2030. Those projections are wildly optimistic, however: BloombergNEF expects the 2030 figure to be closer to 200 gigawatts annually.

Whatever the rate of growth, the economics of the solar market "have significantly improved in the past decade," Li says.

Now, “energy is going to be more electrified, and electricity will be cleaner.” *—With Dan Murtaugh and Feifei Shen*