Title
UK HE International Unit delegation to Mexico, November 2015

Action
For information

Audience
Pro-Vice-Chancellors International, International Directors, other academic and administrative staff with an interest in opportunities to work with government and universities in Mexico.

Executive Summary
From 23-27 November 2015 a delegation of 20 representatives spanning 17 UK higher education institutions met with government ministries, funding bodies, and leading universities in Mexico. The visit was scheduled to mark the 2015 Dual Year of Mexico and the United Kingdom, a major bilateral initiative intended to promote deeper understanding between the two societies and to enhance cooperation in Education, Culture, and Trade, among others.

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Visit summary

1. In November 2015 the UK Higher Education International Unit led a 20-strong delegation, representing 17 UK universities, to Mexico for meetings in Mexico City and Puebla. The delegation was organised in collaboration with Mexico’s National Association of Universities and Higher Education Institutions (ANUIES), with support from the British Council and the British Embassy in Mexico City. In Puebla, the UK delegates attended the ANUIES General Assembly, a major annual gathering of ANUIES’ 180 constituent member higher education institutions. At the November 2015 General Assembly the UK was billed as ‘guest country’, with reference to the 2015 Dual Year initiative – celebrating the UK-Mexico relationship in matters of education, culture, and trade.

2. This visit report opens with general background describing Mexico’s political and economic situation, and referencing the current government’s working priorities for higher education. Thereafter, the meetings in which the UK delegation participated during the course of the November 2015 mission to Mexico are detailed in turn. The objective of the delegation was to further develop and diversify links with Mexican institutions in collaborative research and student and staff mobility, and to explore new opportunities to work directly with Mexican government ministries and sector agencies.

3. A specific, potentially large-scale opportunity for UK universities to work with Mexican universities and with the Ministry of Energy (SENER), to support implementation of the national energy transformation programme – an unprecedented project of reform and investment in the energy sector, with an emphasis on education, training, research and innovation – was identified during meetings with officials in Mexico City. A follow-up visit of Mexican institutions to the UK is envisaged to further develop this opportunity during 2016.

Context: Mexico

Political

4. Mexico’s current President, Enrique Peña Nieto, came to power in December 2012 heading a coalition of the three principal political parties (PRI, PAN, PRD). His government committed to several major structural reforms spanning education, taxation, telecommunications and energy, among others. The President has had greater success in progressing these structural reforms than many of his critics had predicted though Education reform, in particular, continues to be controversial and has been met with angry – and sometimes violent – protests from teaching unions. Reform in this field has focused largely on primary and secondary schooling - and on teacher training and development in particular, rather than on higher education.
Economic

5. Mexico is Latin America’s largest exporter, predicted to be the world’s seventh largest economy by 2050, and with a substantial export profile in the automotive, electrical equipment, minerals, oil and gas, and machinery sectors. It is among the world’s most open economies, maintaining a raft of multilateral and bilateral free trade agreements. Its principal trading partner remains the USA, while the UK represents less than 1% of exports. While technically an upper-middle income country, Mexico remains a highly unequal society - GDP per capita is reported at just under $19,000, but almost half of the country’s 120m people live in poverty. Over 40% of national income is controlled by the richest 1% of Mexican citizens.

Education

6. Mexico today has 10.7m citizens aged between 18-22. The government has set a target for 40% of this demographic to enrol in higher education, to be achieved by the end of the current presidential term (2018). There are over 2m students in higher education, which is made up of 506 public universities and institutions, 423 public technological universities and institutes, and over 2,000 private institutes of higher education.

7. Increasing the scale and quality of Mexico’s research output is a stated priority of the governing administration. Since inauguration, President Enrique Peña Nieto has committed to increasing total R&D spending to 1% of GDP by the end of his six-year term in 2018 (R&D spending was 0.43% of GDP in 2013). Additionally, the President has committed to increasing Mexico’s scientific output, and boosting the National Science and Technology Council’s (CONACYT) budget and overall science budget by 12% and 20% respectively.

8. International postgraduate scholarships funded by CONACYT support almost two thirds of Mexican students studying at UK universities. The UK is typically first or second choice destination for CONACYT-funded students studying overseas, but a majority of self-funding Mexican students continue to choose to study in Spain or the USA.

9. While Mexican students take full advantage of funded opportunities to study in the UK, scholarships to support UK students’ studies or short stays in Mexico – many of which include Spanish language training for those who require it - are routinely underutilised. This is a source of frustration for Mexican officials who are keen to see UK and Mexican institutions working more closely together, particularly in the wake of the 2015 Dual Year.

10. A UK-Mexico government-to-government agreement to facilitate the mutual recognition of academic qualifications is currently under development. An agreement in principle has been signed, with details now to be negotiated by a technical committee. The UK HE International Unit will contribute to this process and will undertake consultation with a representative group of UK universities which will inform the drafting of the final agreement.
Note of meetings

Breakfast Briefing and Overview of UK Newton Fund in Mexico

8. A Breakfast Briefing was hosted by British Council Country Director Lena Milosevic, incorporating a presentation from Salvador Lopez, Head of Science and Innovation at the British Embassy, on opportunities associated with the UK-Mexico Newton Fund. Baroness Jane Bonham Carter, the Prime Minister's Trade Envoy for Mexico, and the Embassy’s Deputy Head of Mission Olivier Evans, provided additional background and affirmed their personal support to the delegation.

9. The declared interests of the UK delegation at this opening meeting were as follows:

- Research collaboration with Mexican universities, business, and civil society.
- Promoting Mexico as a study or work destination for outwardly-mobile UK students.
- Widening participation in UK-Mexico student exchanges.
- Taking UK-Mexico collaboration 'beyond STEM', to include the Creative Industries, Social Sciences, and Humanities.

Meeting with Secretary of Public Education (SEP)

10. This meeting was Hosted by Fernando Cordova Calderón, Chief of Staff to the Vice-Minister for Higher Education, with attendance from the following officials:

- Sandra Caballero Valencia, International Adviser
- Luis Gabino Alzati Ruiz, Adviser to the Minister
- Monica Romero, International Adviser

11. SEP’s strategy for higher education in Mexico divides the country into five administrative regions, each of which has its own, tailored objectives relating to the linkage between educational institutions and the local productive sector. Mexico’s Undersecretary for Higher Education, Salvador Jara Guerrero, has a particular interest in the role of universities in promoting regional development, and intends for the Ministry to play an ever more important coordinating role in this area. The five administrative regions are as follows:

- South/South-West zone: Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Veracruz, Yucatán.
- Central zone: Distrito Federal, el Estado de México, Hidalgo, Morelos, Puebla, Tlaxcala.
- Western zone: Aguascalientes, Colima, Guanajuato, Jalisco, Michoacán, Nayarit, Querétaro, Zacatecas.
- North-East zone: Coahuila, Durango, Nuevo León, San Luis Potosí, Tamaulipas.
- North-West zone: Baja California, Baja California Sur, Chihuahua, Sinaloa, Durango.
16. SEP’s seven main priorities for development of the education system during the presidential term 2013-18 are as follows (there is a clear emphasis on primary and secondary education reform, with comparatively lesser focus on the university sector):

- Strengthening the school system
- Infrastructure, equipment, and educational materials
- Professional development of teachers
- School curriculum review and update
- Equality of opportunity and inclusion
- Linking education with the productive sector
- Administrative transformation (of Mexico’s education sector, and also SEP itself)

12. The Peña Nieto administration is undertaking a major overhaul of Basic Education (primary and secondary schooling), a specific goal of which is to make teaching a more competitive occupation. This will include introducing a mandatory entry exam to gain access to the profession, programmes of continual professional development, and a move away from rote-based learning towards a focus on critical thinking skills. Many teachers seeking to teach a specialist subject will henceforth require a Masters qualification. There has been fierce resistance to the proposed reforms to teaching from powerful unions.

13. SEP’s Chief of Staff described the huge challenge Mexico faces in meeting domestic demand for higher education, and the Ministry’s interest in developing blended or distance learning options to meet the requirement. This is particularly pressing given the Government's target to achieve a 40% enrolment rate for the key demographic cohort of 18-22-year-olds (currently, 34% of young people in this age range enrol in higher education). A significant investment will be made in the National Open University (Universidad Abierta).

14. SEP’s Chief of Staff clarified that Mexico is open to UK transnational education (TNE), and commented that several US universities were developing branch campuses and other forms of local delivery in Mexico. Advice concerning regulation and compliance, for UK universities contemplating developing TNE activity in Mexico, is available via SEP advisers.

15. Attending SEP and ANUIES representatives commented that UK-Mexico mobility via short-stay internships is of particular interest to Mexican institutions, and suggested that these could be tied to specific regional development priorities (the aforementioned administrative ‘regions’) which could also unlock devolved - state-level - funding. INADEM, Mexico’s National Institute for Entrepreneurship, would be a key partner in any such initiative.

16. SEP is keen for the UK to develop a similar model of cooperation with Mexico to that which has been established with the French higher education system - focusing around the preparation of highly skilled, workplace-ready graduates, educated via joint degrees. The Mexico-France model includes a credit transfer or qualification recognition mechanism,
which facilitates access to employment in either country following graduation from a relevant joint degree programme. A favoured example described by SEP staff is the PLM Dassault Systems training centre, hosted at the Technological University of Aguascalientes.

Meeting with AMEXCID (Mexican Agency for International Cooperation for Development)

17. This meeting was hosted by Cristina Ruiz, Deputy Director General for Cooperation with Europe, Asia and North America, with attendance from:

- Abril Peña, Director of Academic Exchange
- Laura Garcia Querol, Director for Technical and Scientific Cooperation, Europe

24 AMEXCID sits within Mexico’s Ministry of Foreign Affairs (SRE). The Agency funds a wide range of mobility programmes aimed at attracting students, professionals, cultural practitioners, and journalists to Mexico. Officials have been continually disappointed by the comparatively low numbers of UK students and professionals taking advantage of AMEXCID-funded opportunities to study and work in Mexico, particularly when compared with enthusiastic participation from other European countries, e.g. France and Germany.

25 AMEXCID officials further lamented the absence of any active ‘executive’ (i.e. government-to-government) cooperation programme with the UK – joint programmes are maintained with several other European partners (Italy, France, Turkey, among others) The Newton Fund was noted as a welcome ‘major change in the UK-Mexico relationship’, but there is a clear sense that UK Government and UK institutions could be doing more to respond to AMEXCID’s clear appetite to develop the relationship with UK universities.

26 It was noted that the UK awarded over 100 Chevening scholarships for Mexican students for 2015-16 study, following a tripling in the Chevening global budget. AMEXCID offers 20 scholarships exclusively to UK students for study in Mexico each year (either one semester exchanges at undergraduate level, or fully-funded degree programmes at MA/PhD/"specialisation" level), yet places are often left unfilled due to lack of take-up. Calls are promoted on an annual basis via the Embassy of Mexico in London, typically between March and August (and are also distributed through UK HE International Unit networks).

27 AMEXCID is working ever more closely with the private sector and with CONALEP - the National College of Professional Technical Education. Earlier in 2015, AMEXCID signed an agreement with the 260 technological institutes in Mexico which means that this network will now be able to host UK and other international students pursuing studies in Mexico via AMEXCID programmes. Full details of all Mexican institutions eligible to host international students in receipt of AMEXCID funding are available via the agency’s website.

28 Beyond degree level studies, AMEXCID funds a wide range of scholarship and residency programmes across the arts, media, music, and in Latin American Studies. Programmes
typically last between 1 and 6 months and are described in further detail in AMEXCID’s corporate presentation, available on request.

29 AMEXCID is developing joint programmes with other member countries of the Pacific Alliance network (Mexico, Colombia, Peru, Chile) but this remains at a relatively early stage. Some opportunities for UK-Pacific Alliance cooperation have already been promoted via the UK-Mexico Newton Fund, and more are likely to be issued during 2016.

**Meeting with National Council for Science and Technology (CONACYT)**

30 Arturo Borja, Director of International Cooperation, hosted this meeting, at which CONACYT’s senior team of Directors provided presentations describing each of the principal areas of CONACYT activity - all presentations are available on request.

31 Attendance to this meeting was as follows:

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<td>Mr.</td>
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<td>Rojo</td>
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<td>Dr.</td>
<td>Guillermo</td>
<td>Hernández</td>
<td>Head of Newton Fund at British Council</td>
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34. CONACYT maintains a national network of 26 research centres, which undertake both basic and applied research, and several of which maintain close links to business and industry. The centres are evenly geographically distributed across Mexico and a wide range of research areas are represented – incorporating the social sciences and humanities as well as STEM subjects. The centres provide teaching as well as developing research activity, and are able to host international students, from undergraduate level onwards.

35. Dolores Sánchez, Deputy General Director of Scholarships and Postgraduate Studies, and Pablo Rojo, Director of Scholarships, highlighted that in 2014 CONACYT funded 57,426 scholarships in total. Of these, 5,991 were for international study, the remainder being for
students studying at Mexican higher education institutions. CONACYT plays an important role in accrediting postgraduate degree programmes in Mexico through academic peer evaluation committees. Approximately 1,900 PG programmes have been accredited in this way to date, details of which are published via a publicly-accessible database hosted on the CONACYT website.

36. There are currently 2,446 international, CONACYT-funded students studying in Mexico, mainly from across Latin America and Spain. Very few are from the UK and CONACYT is keen to increase the number of students and staff from the UK who study or undertake some form of research placement at Mexican universities.

37. In 2015 the UK was the first choice of study destination for CONACYT-funded students, ahead of the USA. CONACYT officials note that the UK higher education sector has significantly more direct (i.e. CONACYT-university) agreements than any other partner country, including the USA.

38. CONACYT funds a small number of scholarships for students pursuing degrees in the arts and creative industries but there is considerably less resource for study in these areas than for STEM, which has traditionally been prioritised by CONACYT (and which will continue to be afforded a higher priority for funding for the foreseeable future, according to officials).

39. CONACYT funds both Mexican students seeking short stay overseas and also UK students wishing to spend a short stay in Mexico. It is not necessary to have a formal agreement with CONACYT, or to feature in CONACYT’s scholarship eligibility list, in order to bid for funding for short-stay opportunities. CONACYT Director Julia Tagueña called on UK universities to better promote opportunities beyond full degree scholarship routes within their institutions.

40. CONACYT is able to assist UK institutions seeking to identify suitable programmes for potential joint degree arrangements with Mexican universities through the agency’s database of accredited university degree programmes. Where joint degrees are concerned, CONACYT-funded students will be required to commence their studies at a Mexican institution before going overseas in order to be eligible for funding for the duration of the joint degree programme. Where UK institutions wish to develop sandwich PhD programmes with a Mexican university partner, a formal agreement is required with the Mexican institution in order for participating students to be eligible for CONACYT funding.

Meeting with National Autonomous University of Mexico International Directorate

41. The National Autonomous University of Mexico (UNAM) produces one third of all research in Mexico, has over 300,000 registered students, and maintains a vast range of teaching, research, and innovation centres across Mexico and internationally. The UNAM high school system alone represents around 100,000 students.
42. UNAM’s Dr Francisco Trigo Tavera, Secretary of Institutional Development, hosted this meeting, which included an introductory presentation describing the university and the work of the international directorate (DGECI) – available on request. Dr Trigo oversees all international activity at a general level, while colleague Dr Armando Lodigiani oversees mobility programmes, grants, and international agreements, and is the point of contact for any UK university seeking to develop a formal agreement with the institution. UNAM requires the signature of a general partnership agreement prior to the development of any joint activities – available on request to UNAM’s international team.

43. Most of the university’s budget comes direct from the federal government. Mexico’s Congress allocates core funding, which cover 85-90% of UNAM’s total expenditure. UNAM students do not pay tuition fees at either undergraduate or postgraduate levels (with some notable exceptions, particularly in medical specialisations). 170,000 of UNAM’s 300,000 students receive some form of scholarship to support their living or other maintenance costs. A typical UNAM undergraduate programme is four to five years in duration.

44. Reflecting the calibre of UNAM students, the university’s postgraduates receive about a third of all CONACYT scholarship grants for study in Mexico. Where UNAM students in receipt of a CONACYT grant wish to spend a semester or similar at a UK university, CONACYT is able to adjust the scholarship maintenance payments to reflect UK living costs – this was described by UNAM staff as a straightforward process which, in most cases, can be arranged mid-way through a student’s degree studies.

45. UNAM is developing co-tutelle models with international partners and has such structures in place with French and Spanish institutions. A UK dual PhD, the first of its kind, is currently under development with KCL – which now has permanent representation from an UNAM member of staff based at its London campus. Double degrees are encouraged at Masters level, with a two-year, four-semester programme the favoured model - the first year focusing on taught courses and the second year emphasising research. UNAM is looking into 2+3 or similar undergraduate degree structures with UTC in France (in the early stages of development and the first agreement of its type for UNAM).

46. The international directorate is in the process of consolidating a database of all UNAM international activities, to include details of all existing mobility and research collaboration agreements. Attending UNAM representatives stressed that UNAM is very willing to work with UK institutions on a flexible basis in order to find mutually-agreeable approaches for the implementation of dual degree structures and cooperation in other areas.

47. UNAM has a dedicated ‘school for foreign students’ (CEPE) which provides Spanish language teaching, cultural education, and other programmes of induction and training. The CEPE model allows UK students to follow a UNAM course of study (typically one or two
UNAM degree modules) alongside Spanish language tuition and Mexican cultural studies. UNAM’s centre for the teaching of foreign languages (CELE) teaches foreign languages and advanced English language courses. Basic English language teaching and provision is catered for within individual UNAM faculties.

48. Following the introductory meeting, UNAM staff hosted the IU delegation at three parallel meetings located at the following faculties:

- Faculty of Medicine
- Faculty of Engineering
- Faculty of Arts and Design

Meeting with Ministry of Energy (SENER)

49. This meeting was hosted by Carlos Ortiz, Director General for Research and Technological Development, representing Undersecretary Leonardo Beltrán. The International Unit is able to effect introductions to SENER’s UK-based representative, Nelson Mojarro, on behalf of interested UK universities. An introductory presentation describing the energy reform and SENER’s interests in working with UK universities is also available on request.

50. Following a major constitutional reform in 2013 – opening up the oil, gas and power industries to international companies for the first time, and ending the national oil and gas company’s (PEMEX) longstanding sector monopoly – Mexico has encouraged private sector participation and competition in these sectors with the objective of increasing output and efficiency. Underpinning this transformation are unprecedented investments in energy education, training, research and innovation, including a commitment to fund 60,000 scholarships in subject disciplines relevant to the energy reform.

51. SENER estimates that by 2018 the energy reform programme will directly create 135,000 new jobs in Mexico’s energy and power industries, with a similar number of new positions generated in subsidiary areas. While domestic graduation rates in relevant degree disciplines are, in theory, sufficient to meet demand, in practice SENER considers that many graduates conclude their studies without acquiring a sufficient level of technically skills and expertise in order to apply themselves in the job market. As a result, SENER is particularly interested in working with overseas universities to develop accredited short courses to consolidate graduates’ and current employees’ existing skill sets.

52. The main areas of interest for UK universities may be summarised as follows:

- The establishment of five new Mexican Energy Innovation Centres (CEMIES), representing a total investment of approximately £100 million. The ‘CEMIES’ are virtual
centres, funded for an initial period of four years, which bring together academia and industry. International partners are sought to accelerate the deployment of new technologies – which will focus on wind, solar, geothermal, bioenergy, and ocean energy respectively. A further investment is to be made in smart grids and/or carbon capture and storage. The CEMIES are intended to focus on technology deployment and application rather than ‘blue skies’ research or development of novel technologies.

- A commitment to fund 60,000 scholarships in subjects relevant to the energy reform, to address identified skills gaps in the Mexican energy sector. Scholarships will span technical, undergraduate and postgraduate levels – from short courses with a focus on technical skills up to PhD, post-doctoral and MBA. Approximately 48,000 scholarships will be dedicated to funding technical and vocational level courses, with a remaining 12,000 places envisaged for postgraduate study. UK universities are invited to pursue agreements with SENER in order to host students in receipt of a SENER scholarship. There is interest in funding scholarships not only in areas of immediate direct, technical relevance (e.g. qualifications in petroleum engineering, pipeline management) but also in subsidiary areas (e.g. oil and gas management, logistics, procurement).

53. SENER explains the drivers for the energy reform with reference to declining outputs and the resulting impact on government revenues (oil and gas representing up to 30-40% of total revenue). Production of oil and gas in Mexico peaked in 2004 and has since been in decline. There had been a sustained increase in investment via the national operator, PEMEX, in an attempt to stimulate production, but output nonetheless continued to fall. Diminishing output was for many years disguised by a surging oil price; with the collapse in prices of recent years, structural reform was considered essential to address the problem.

54. Shale gas and oil has yet to be developed in Mexico but is likely to become a feature of the industry in future and may form a part of the energy transformation programme. Mexico’s conventional oil and gas reserves have largely been exploited - the challenge now is to extract from more challenging wells and to maximise recovery from existing assets. 76% of Mexico’s prospective future resources are located in deep water environments. Mexico is experienced in extracting from shallow water environments (Gulf of Mexico) but has less expertise in extracting from deep water environments (Pacific Coast). One of the aims of the Energy Reform aims is to bring in international expertise to develop these fields.

55. By 2024, 35% of energy produced in Mexico is expected to come from renewables – this is enshrined in law. A certificates program is intended to encourage clean technology, but SENER acknowledges that the 35% target is a long way from being fully achieved at present, and that current policies are in need of further refinement.
56. Working with consultancy firm Deloitte, SENER has developed an interactive tool, accessible via its website, through which any interested party can examine national labour market needs in terms of skills training and produce customised reports which map demand across timescales and for particular sub-sections of the workforce. Additionally, SENER has mapped Mexico’s domestic provision of further and higher education training capability in specific areas of relevance to the Energy Reform and produced a tool which allows users to view the availability of particular types of training in specific geographic regions, and to filter results by type of training, by form of accreditation, and other variables. Available via: [www.sener.gob.mx/becas](http://www.sener.gob.mx/becas)

57. The aforementioned mapping exercises were undertaken primarily with industry in mind, but will also be of interest to UK universities seeking to identify prospective Mexican partner institutions offering accredited energy training programmes, or to identify where gaps exist in current provision in Mexico (and therefore in which areas accredited UK training could be particularly attractive to SENER). Only a minority of Mexican higher education programmes in energy subjects presently have recognised accreditation.

58. SENER declares itself open to all proposals for new programmes of training or collaborative activity from UK universities and welcomes speculative interest. Proposals are more likely to be well-received where the UK institution can clearly demonstrate a collaborative approach, ideally centred on proposed joint delivery of education and training, or other forms of cooperation (e.g. collaborative research or innovation via the CEMIES) with a Mexican university or research institute. SENER’s UK-based representative, Nelson Mojarro, is the recommended first point of contact for interested institutions – introductions can be arranged on request to the International Unit.