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To the Board of Directors of Alpiq Holding AG ("Alpiq") and to the new Board members to be appointed at the EGM to be held in Olten on 21 August 2019

19 August, 2019

Ladies and Gentlemen,

I am writing to you on behalf of Knight Vinke, which owns 1.3% of Alpiq's outstanding share capital with the intention of being a long-term investor. We understand that a number of other institutional investors which hold similar minority positions in Alpiq share our views.

The purpose of this letter is to request that plans being made to delist the shares of Alpiq and forcefully squeeze out minority shareholders at CHF 70 per share on completion of the CSA public tender offer (PTO) be abandoned immediately.

We also request that the Board commission a new fairness opinion on the grounds that (i) the PwC Fairness Opinion dated 9 July 2019 is seriously flawed in many ways and (ii) PwC acts as auditor to Credit Suisse Fondation de Placement, the bidder's immediate parent, and therefore has manifest conflicts of interests.

We fully endorse the controlling shareholders' new strategy (first described in the *NZZ am Sonntag* on 7 April 2019 and then subsequently explained in the Board Report attached to the PTO Prospectus) that would see Alpiq refocusing on Swiss hydro.

For the avoidance of doubt, we are absolutely <u>not</u> seeking to stop CSA's PTO. It is any investor's right to make such a PTO and we respect that -- even though we and many other investors believe that the PTO massively undervalues the Company and may therefore not tender our shares. What we do oppose is being deprived of the opportunity to continue participating as long-term investors in the upside that we see in Alpiq's unique portfolio of hydro assets in Switzerland. This is why we now request that the delisting and squeeze-out be abandoned.

PwC's Fairness Opinion is seriously flawed

In support of our views, we attach herewith as an Appendix an independent review of certain key aspects of PwC's valuation work that we commissioned from Oxera Consulting LLP, a leading European economics and finance consultancy.

PwC's Fairness Opinion predominantly relies upon DCF calculations to value Alpiq and we have no issues in principle with the methodology that is used or the power price projections underlying their cash flow projections. Where we do have an issue is with respect to the weighted average cost of capital (WACC) that is used by PwC to discount these cash flows.

We believe that PwC may have made a number of methodological errors resulting in the discount rate being far too high. Correcting these errors would result in PwC's valuation of Alpiq increasing by 50-75%, thereby supporting our view that CSA's proposed squeeze-out price massively undervalues the Company.

To be more specific, we believe that PwC overestimates the WACC (and therefore underestimates the equity valuation) primarily in two ways.

First, by adding to the cost of equity a substantial "country risk premium" that is weighted in accordance with the domicile of the Group's customers rather than the location of its fixed assets. There can be no doubt that the vast majority of Alpiq's value lies in its unique portfolio of power generation and hydro storage assets in Switzerland. Whilst PwC's revenue-driven approach may appear to be uncontroversial, one should remember that the majority of Alpiq's revenues outside of Switzerland are sold at wholesale prices with very small margins. The value of the sales and trading activities that reside within the Digital & Commerce segment therefore pales into insignificance when compared to the value of Alpiq's fixed assets – assets such as Grande Dixence, for example, which on its own cost approx. CHF 2 billion to build.

Switzerland is one of the few countries in the world to be privileged with a AAA credit rating and Alpiq's country risk premium should therefore be near zero, particularly in light of the current disposition of its fixed assets and the strategy enunciated by Alpiq's controlling shareholders to focus on hydropower generation in Switzerland in the future.

Secondly, PwC incorrectly adds a "small-cap premium" to Alpiq's cost of equity. As explained in Oxera's report, what is particularly striking about this is the fact that PwC itself explicitly recognizes the absence of academic consensus on the existence and significance of a size premium in a report submitted to Ofwat, the England & Wales water regulator, in 2014. Furthermore, we also note that in Switzerland the regulator applies no size premium in the case of Swissgrid, a company that is smaller than Alpiq on all key metrics.

Alpiq cannot be deprived of access to the stock market in the future

Hydro-power is the backbone of Switzerland's Energy Strategy 2050, representing almost 60% of all electricity produced in the country; it will play an even greater role as nuclear power is phased out. Alpiq is Switzerland's largest hydro-power producer by capacity and its future is therefore of immense strategic importance to the Confederation.

If Alpiq is to grow in Switzerland, fulfilling hydro's promise of guaranteeing security of supply, the Company will increasingly need access to investors with deep pockets and a genuinely long-term perspective. Significant capital resources are required to safely maintain existing dams and related infrastructure and to renew concessions as they expire. Capital will surely also be required to maintain and upgrade nuclear facilities. In this context, we view plans to delist Alpiq's shares and forcefully squeeze out the public float at a discount to book value as opportunistic and lacking in vision.

As it grows Alpiq will doubtless require access to equity capital as well as debt. By mistreating the public shareholders in this way, Alpiq's Board and controlling shareholders will cause irreparable damage to the Company's reputation within the investment community, closing the door to a relisting and depriving the Company of access to a major source of capital it will doubtless need in the future.

Our investors are ready to support Alpiq with substantial amounts of long-term capital

There is huge demand amongst institutional investors for investments with long lives, sustainable free cash flow and zero CO_2 emissions – particularly high-quality hydro assets located in AAA-rated OECD countries such as Switzerland. Based on discussions we have had with major existing and prospective clients, we strongly believe that Alpiq – or preferably even Alpiq Suisse SA which is where the hydro fleet is mostly located -- would attract substantial demand from Swiss-based institutional investors were the Board to be more convincing in its commitment to the protection of minority shareholders and financial transparency.

Alpiq has not paid a dividend for four years but this is a temporary situation largely attributable to its balance sheet being stretched by over-expansion and the pursuit of diversification in the past. As mentioned in the PwC Fairness Opinion, free cash flow will rise six-fold over the next 10 years. A large part of this is locked in through hedging and there is more to come as additional capacity comes on stream (i.e. Nant de Drance, Fionnay, La Clusaz).

The Board needs to act with true independence.

From a governance perspective, the situation at Alpiq is appalling – particularly as seen by minority shareholders.

Given that CSA and its partners already control 88.4% of Alpiq's share capital and that the threshold for imposing a squeeze-out is 90%, the risk of a squeeze-out at CHF 70 is a major obstacle for investors wishing to invest in Alpiq at higher prices. It is also a major threat for long-term minority investors who will almost certainly have invested at much higher prices in the past and will therefore be forced to take a substantial loss if they are squeezed out at CHF 70.

Twelve of the thirteen members of the Board have recused themselves due to conflicts of interest (i.e. they have ties with CSA) and the Chairman, who is the sole independent member of the Board, has chosen to NOT advise shareholders on the financial adequacy of the CSA offer price. The only document that has been provided to shareholders is the PwC Fairness Opinion, which is seriously misleading in our opinion.

The fact that the PTO and squeeze-out of minority shareholders are plagued by conflicts of interest is aggravated by the asymmetry of information between controlling shareholders, on the one hand, and the free float public shareholders, on the other. The former directly and/or indirectly have Board representation and access to business plans, management reports, information on related party supply contracts and other material non-public information. The latter can only rely on incomplete and complex published information that is often unavailable on the internet and hard to obtain.

Having regulations in place that protect minority shareholders in public companies against oppression from a dominant shareholder and ensure equality of treatment for all investors surely rank amongst the most important factors that differentiate high quality financial markets such as the Swiss equity market from other less attractive markets. Switzerland has its rules and FINMA will of course ensure that these rules are respected but the investment community at times will expect that leading market participants go beyond the minimum standards that the regulator has set – particularly in unusual circumstances such as those surrounding Alpiq today. Confidence in market integrity can quickly be undermined if leading participants fail to act with irreproachable independence in the interests of <u>all</u> shareholders, regardless of who appointed them.

In light of the above, we hereby request that the Board as a whole, including representatives of the 88.4% controlling shareholder block, consider the above-mentioned requests. Namely, that the planned delisting and squeeze-out of Alpiq be immediately abandoned and that a new fairness opinion be commissioned from a truly independent expert. I would add that best practice would normally dictate that the independent members of the Board form a special committee to defend the interests of Alpiq's minority shareholders, advised by an independent financial adviser or investment bank whose mandate would likewise be to protect the interests of the minority shareholders.

Yours sincerely

Eric Knight

Appendix: "Review of PwC's discount rate for Alpiq Holding SA, Oxera, 16 August 2019

cc: FINMA

Review of PwC's discount rate for Alpiq Holding SA

Note prepared for Knight Vinke Research (UK) Ltd

16 August 2019

Strictly confidential

1 Summary

1.1 On 9 July 2019, PricewaterhouseCoopers ('PwC') prepared a fairness opinion for the Board of Directors of Alpiq Holding Ltd, in which PwC assessed the financial adequacy of the public takeover by Schweizer Kraftwerksbeteiligungs-AG ('SKBAG') of the free-floating shares of Alpiq Holding SA ('Alpiq'). In its fairness opinion, PwC concluded that the offered price by SKBAG of CHF 70.0 per Alpiq share is 'fair and appropriate from a financial point of view.'[1]

1.2 In reaching this conclusion, PwC estimated Alpiq's discount rate, as measured by the weighted average cost of capital (or 'WACC'), to be 5.7%.[2] This discount rate incorporates a country risk premium of 0.9% and a small-cap premium of 1.4% that PwC added to Alpiq's cost of equity.[3]

[1] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 26.
[2] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 20. While this is not made explicit in PwC's analysis, we understand that this represents a nominal post-tax WACC.
[3] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 20.

1.3 Oxera was asked by Knight Vinke Research (UK) Ltd to undertake an independent review of PwC's WACC for Alpiq, focusing in particular on the appropriateness of the inclusion and size of the country risk premium and small-cap premium of 0.9% and 1.4% respectively.[4] We have not been asked to comment on other aspects of PwC's analysis, nor have we been provided with PwC's underlying models, Alpiq's business plans and cashflow projections, or other sources supporting PwC's fairness opinion.

1.4 For the reasons set out in this note, we are of the view that:

- PwC's estimate of the **country risk premium** of 0.9% is too large, and should be revised downwards to 0.0–0.2%;
- it is inappropriate to include a **small-cap premium** for Alpiq, and so the 1.4% small-cap premium should be excluded from PwC's estimate of Alpiq's discount rate;
- PwC's estimate of Alpiq's **asset beta** of 0.6 may need to be revisited and we have presented the implications of using a lower asset beta assumption of 0.5 for illustrative purposes.

1.5 The combined impact of the corrections outlined above is to **reduce PwC's estimate of Alpiq's WACC from 5.7% to 4.3–4.4%** (assuming no change to Alpiq's asset beta) or **3.7–3.8%** (assuming a lower asset beta of 0.5). Based on PwC's own analysis, these corrections to Alpiq's discount rate lead to an **increase in the value of Alpiq's shares from CHF 70.0 per share to CHF 103.7–106.3 per share** (assuming no change to Alpiq's asset beta), or **CHF 119.2–121.8 per share** (assuming a lower asset beta of 0.5). We note that Alpiq's book value per share of CHF 103 as at 31 December 2018 is consistent with the low end of these ranges.[5]

2 PwC overestimated the country risk premium

2.1 PwC incorporated a country risk premium of 0.9% in its estimation of Alpiq's cost of equity.[6] This estimate reflects a weighted average of country risk premia for various countries in Europe taken from Professor Aswath

[4] PwC added these premia to Alpiq's cost of equity estimated based on the capital asset pricing model (CAPM).
[5] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 21.
[6] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 20.

Damodaran's website, with the weights being based on Alpiq's turnover in each country.[7]

2.2 As an initial observation, we note that PwC claimed to have valued Alpiq using a sum of parts approach.[8] This approach normally involves discounting the projected cashflows of each business unit by the appropriate discount rate for that unit. However, it appears that PwC has used a **single** discount rate for **all** cashflows. We consider that PwC's analysis is inconsistent with a sum of parts approach, and can be best described as a proxy for a sum of parts valuation. However, as we do not have access to PwC's underlying analysis or Alpiq's business plan, we are not able to assess the impact of correcting this issue on Alpiq's valuation.

2.3 Notwithstanding this conceptual issue, we consider that there are two practical problems with PwC's estimation of the weighted average country risk premium which lead to its overestimation.

- First, we consider that in this specific context, the country risk premium data for individual countries from Professor Damodaran's website needs to be adjusted downwards.
- Second, in this particular case, we consider that it is more appropriate to weight the country risk premium for each country based on Alpiq's assets rather than Alpiq's turnover.

2.4 We discuss each issue in turn below.

2A Necessary adjustment to the country risk premium data from Professor Damodaran's website

2.5 The country risk premium data that PwC obtained from Professor Damodaran's website has been scaled up by Professor Damodaran by a factor of 1.23. Professor Damodaran justifies this on the basis of the higher volatility of emerging equity market indices relative to that of emerging market government bond indices.[9] We do not consider that such an adjustment is appropriate in this specific context given that this was estimated based on **emerging** market

[7] Professor Aswath Damodaran is a Professor of Finance at the Stern School of Business at New York University. While PwC did not explicitly mention that the weights are based on Alpiq's turnover, we have managed to replicate PwC's weighted average estimate of 0.9% based on the geographical breakdown of Alpiq's turnover based on data from Bloomberg.

[8] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 18.

[9] See Professor Damodaran's website, 'Country Default Spreads and Risk Premiums', last updated January 2019, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html, last accessed 9 August 2019.

indices, whereas Alpiq does not operate in emerging markets.[10] Moreover, Professor Damodaran explained that the adjustment for the differences in volatility between equity and bond markets is more important in the **short term**,[11] whereas PwC's valuation of Alpiq takes a long-term perspective. For these two reasons, we consider that it would be more appropriate to exclude this scaling factor of 1.23 when estimating the weighted average country risk premium for Alpiq based on Professor Damodaran's website.

2.6 Correcting for this issue decreases PwC's estimate of the weighted average country risk premium from 0.9% to 0.7%.[12]

2B Appropriate weighting of the country risk premia

2.7 As discussed above, PwC has weighted the country risk premium of different countries based on Alpiq's turnover in each country.

2.8 We consider that the most appropriate weighting to measure Alpiq's geographical risk exposure would be based on the geographical distribution of Alpiq's assets. While turnover may represent an appropriate proxy for the value of certain companies, there is reason to suggest that weighting by assets would be more appropriate for Alpiq.

2.9 We note that an obvious downside of turnover-based weighting is that it would attribute significant weights to operations that generate large sales but small profits, and which therefore do not contribute much towards Alpiq's value. For example, we understand that Alpiq's operations in France include a retail business that generates large sales but limited profits. As a result, a turnover-based weighting would overestimate Alpiq's economic exposure to France.

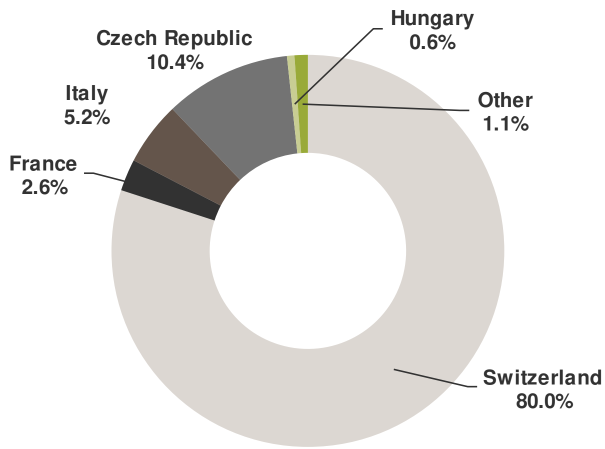
2.10 In our view, the geographical distribution of the profitability of Alpiq's operations is a more appropriate proxy for Alpiq's risk exposure to different countries. However, without access to forward-looking projections on the profitability of Alpiq's operations, it is not possible to undertake an analysis using profitability-based or cashflow-based weights.

[10] Alpiq's 2018 annual accounts mention the following countries in their segmental reporting: Switzerland, Italy, Hungary, France, Germany, the UK, Poland, and the Czech Republic. See p. 138 of Alpiq's 2018 annual accounts.
[11] See Professor Damodaran's website, 'Country Default Spreads and Risk Premiums', last updated January 2019, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html, last accessed 9 August 2019.
[12] We have assumed that the revenues from countries listed as 'Other' in Alpiq's segment breakdown are not subject to a country risk premium. This is to ensure that we have the same starting point for Alpiq's weighted average risk premium as PwC (i.e. 0.9%).

2.11 Instead, based on our understanding that Alpiq's energy generation fixed assets are expected to generate most of the profits to Alpiq going forward (rather than its asset-light energy trading business), we consider that a weighting based on Alpiq's fixed assets in different countries is more appropriate for estimating Alpiq's country risk premium.

2.12 Our preference for relying on an asset-based weighting to turnover-based weighting is supported by the fact that Alpiq's non-current assets are significantly more concentrated in a small number of countries, whereas Alpiq's revenues are geographically diversified, as shown in Figure 2.1 and Figure 2.2. This means that Alpiq has the flexibility of selling the electricity it generates to different markets, whereas it is considerably more costly and complicated for Alpiq to move its generation assets from one country to another. This suggests that Alpiq's country risk exposure is more likely to be tied to the location of its assets than that of its revenues.

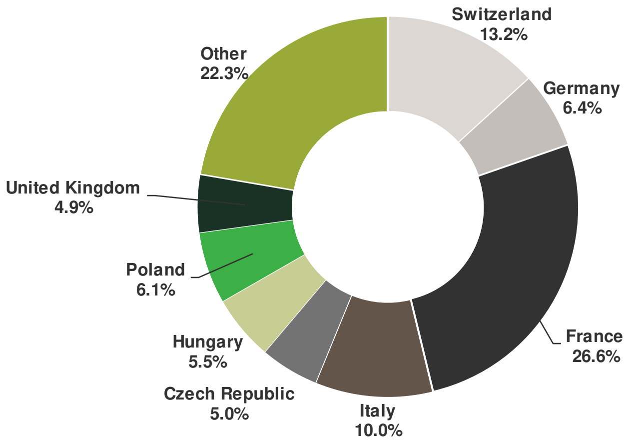
Figure 2.1 Geographical distribution of Alpiq's non-current assets in 2018 (%)



Note: This includes Alpiq's operations in the Czech Republic, which were sold in May 2019.

Source: Oxera analysis based on p. 138 of Alpiq's 2018 financial accounts.

Figure 2.2 Geographical distribution of Alpiq's revenues in 2018 (%)



Note: This includes Alpiq's operations in the Czech Republic, which were sold in May 2019.

Source: Oxera analysis based on p. 138 of Alpiq's 2018 financial accounts.

2.13 Using an asset-based weighting based on Alpiq's 2018 financial accounts for the country risk premia further decreases PwC's estimate of the weighted average country risk premium from 0.7% to 0.2%.[13]

2.14 Furthermore, we consider that SKBAG's long-term strategy of transforming Alpiq into a pure Swiss business means that an even lower country risk premium may be appropriate. More specifically, in an article by NZZ am Sonntag dated 6 April 2019, SKBAG (the acquirer of Alpiq's free-floating shares and part of the shareholding consortium that now controls Alpiq) stated that its objective is to transform Alpiq into a power plant that supplies Swiss electricity to its Swiss owners, and to divest its international operations.[14] Similarly, Alpiq stated in a press release that it shares the long-term vision of focusing on Swiss operations once market conditions improve in Switzerland.[15] This is also consistent with the fact that, on 17 May 2019, Alpiq announced the sale of its coal power plants in the Czech Republic for CHF 310 million.[16] We also understand that Alpiq's operations in Hungary and Spain are currently up for sale.

[13] We have excluded Alpiq's assets in the Czech Republic in light of the announcement of the sale of its power plants.
[14] Article by NZZ am Sonntag dated 6 April 2019, 'Stromriese Alpiq soll massiv schrumpfen', https://nzzas.nzz.ch/wirtschaft/stromriese-alpiq-soll-massiv-schrumpfen-ld.1473312?reduced=true, last accessed 9 August 2019.
[15] Alpiq press release dated 9 April 2019, 'Clarification relating to the media report in the "NZZ am Sonntag" newspaper dated 7 April 2019', https://www.alpiq.com/alpiq-group/media-relations/media-releases/media-release-detail/clarification-relating-to-the-media-report-in-the-nzz-am-sonntag-newspaper-dated-7-april-2019/, last accessed 9 August 2019.
[16] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, footnote 2.

2.15 Therefore, we consider that a reasonable range for Alpiq's country risk premium is between 0.0% (assuming Alpiq is transformed into a pure Swiss business going forward) and 0.2%.[17]

3 A small-cap premium is not appropriate for Alpiq

3.1 PwC added a small-cap premium of 1.4% to Alpiq's cost of equity based on Duff & Phelps' 2018 Valuation Handbook.[18] As an initial observation, we note that, based on Duff & Phelps' updated analysis in its 2019 Valuation Handbook, PwC's estimate of the size premium for Alpiq would reduce from 1.4% to 1.2%.[19]

3.2 In this section, we discuss why we consider that it is not appropriate to include a small-cap premium when estimating Alpiq's cost of equity.

3.3 First, we note that PwC's approach of including a size premium for Alpiq is inconsistent with its own statements regarding the lack of academic consensus on the existence and significance of a size premium, as discussed in PwC's report for the England & Wales water regulator, Ofwat, in a report from 2014:[20]

> However, academic evidence on the validity of the small company premium shows that there is a **lack of consensus on whether size premium exists** as a direct result of company size. Indeed, some empirical studies have suggested that the data shows **negative premiums** in both the UK and the US. [emphasis added]
>
> So the academic view, which has now prevailed for a number of years, is that there is **significant doubt on whether a small company effect exists**. [emphasis added]

3.4 For the avoidance of doubt, we note that the question of whether PwC's statements above are correct is beyond the scope of this note. However, these statements serve to show that PwC's own arguments suggest that no size premium should be included for Alpiq.

3.5 Second, we note that Duff & Phelps' 2019 Valuation Handbook states that a statistically significant size effect was only observed for the *smallest* companies and was not uniformly detected in all countries examined (i.e. the size effect was strongest in the Anglo-Saxon and Nordic countries, for

[17] Switzerland has an AAA credit rating and therefore is not subject to a country risk premium. See Professor Damodaran's website, 'Country Default Spreads and Risk Premiums', last updated January 2019, http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html, last accessed 9 August 2019.
[18] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 20.
[19] This is due to an update of Duff & Phelps' regression coefficients in the 2019 Valuation Handbook relative to the 2018 Valuation Handbook.
[20] PwC (2014), 'Company specific adjustments to the WACC, a report prepared for Ofwat', August, pp. 26–27.

example).[21] PwC has not demonstrated that this criterion of the 'smallest companies' is relevant for Alpiq.

3.6 With this in mind, we note that out of the 273 companies listed in Switzerland, Alpiq ranks in the 90th percentile based on revenues, 81st percentile based on number of employees, 70th percentile based on market capitalisation, and 84th percentile based on total assets.[22] These statistics suggest that Alpiq is by no means small relative to Swiss listed companies, and there is no basis for incorporating a size premium when estimating Alpiq's cost of equity.

3.7 Third, our review of a sample of regulatory precedents for companies that are much smaller in size relative to Alpiq in Switzerland, Portugal and the UK suggests that PwC's inclusion of a small-cap premium of 1.4% in Alpiq's cost of equity is inconsistent with such regulatory precedents.

3.8 Most notably, we observe that no size premium was added to the cost of equity of Swissgrid (the Swiss transmission operator) in its latest price determination,[23] despite it being much smaller than Alpiq, as illustrated in Table 3.1. Similarly, no size premium was included in the latest price determination of Redes Energéticas Nacionais (a Portuguese gas transmission company), despite it being much smaller than Alpiq.[24]

3.9 In the UK, the Competition and Markets Authority (CMA) allowed for an uplift to Bristol Water's asset beta of up to 13% in 2015 in light of Bristol Water's higher operational gearing.[25] As illustrated in Table 3.1, Alpiq is a much larger company than Bristol Water. However, for the sake of illustration, we note that applying the same 13% uplift to PwC's estimate of Alpiq's asset beta would lead to a cost of equity of 7.6% for Alpiq. This is still 0.8% lower than the cost of equity obtained by PwC by including a 1.4% small-cap premium based on Duff & Phelps' analysis.

[21] Duff & Phelps (2019), '2019 Valuation Handbook, International Guide to Cost of Capital', pp. 7-1 and 7-13.
[22] Oxera analysis based on data from Orbis.
[23] Office fédéral de l'énergie OFEN (2019), 'Explications relatives au calcul du taux d'intérêt calculé conformément à l'art. 13, al. 3, let. b, de l'ordonnance sur l'approvisionnement en électricité (OApEl) pour l'année tarifaire 2020', 13 February.
[24] Entidade Reguladora dos Serviços Energéticos (2017), 'Parâmetros de Regulação para o Período 2018 a 2020', December.
[25] CMA (2015), 'Bristol Water plc, A reference under section 12(3)(a) of the Water Industry Act 1991', 6 October, para. 10.162.

Table 3.1 Comparison of size between Alpiq and various companies (€m, except number of employees)

	Turnover	Assets	Equity	Number of employees
Alpiq	4,491	8,062	3,504	1,548
Redes Energéticas Nacionais	721	5,192	1,464	692
Swissgrid[1]	618	2,617	958	461
Bristol Water	142	898	261	518

Note: This data reflects information from the latest available financial year for each company. Book value of assets and equity is reported.

Source: Oxera analysis based on data from Bloomberg and Orbis. [1] Swissgrid's data is based on Swissgrid's financial accounts for the year ending 31 December 2018, converted to euros using exchange rate data from the European Central Bank.

3.10 Similarly, we note that a direct application of the Duff & Phelps approach to estimate the size premium for Energias de Portugal (a Portuguese electric utility company and one of the companies included in PwC's comparator analysis) leads to a size premium of over 0.4% for this company.[26] However, the company's regulator (Entidade Reguladora dos Serviços Energéticos) has not allowed for a small-cap premium in its latest regulatory determination covering the period 2018–20 for this company.[27]

3.11 Fourth, a straight application of the Duff & Phelps approach to Energa (a Polish utility company included in PwC's comparator analysis) yields a size premium of 1.25%.[28] However, a review of a sample of analyst reports covering this company and its cost of capital suggests that these analysts do not include a small-cap premium in the discount rate used to value this company.[29]

3.12 In light of the discussion above, we consider that PwC's inclusion of a size premium for Alpiq is not appropriate and should be excluded from PwC's discount rate.

4 PwC's asset beta assumption may need to be revisited

4.1 PwC assumed an asset beta of 0.6 for Alpiq using a comparator-based analysis.[30] While a detailed assessment of the appropriateness of PwC's asset beta is beyond the scope of our analysis, we note the following regarding the riskiness of Alpiq's business.

[26] Oxera analysis based on Duff & Phelps (2019), '2019 Valuation Handbook, International Guide to Cost of Capital'.
[27] Entidade Reguladora dos Serviços Energéticos (2017), 'Parâmetros de Regulação para o Período 2018 a 2020', December.
[28] Oxera analysis based on Duff & Phelps (2019), '2019 Valuation Handbook, International Guide to Cost of Capital'.
[29] See, for example, Santander (2019), 'Warsaw, We Have (Trade) Problem?', 11 June, Figure 7.
[30] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 20.

- First, we understand that a substantial proportion of the electricity generated by Alpiq is covered by long-term fixed price contracts which protect Alpiq from price shocks.
- Second, we understand that a substantial proportion of the electricity generated by Alpiq is actually produced by 'partner plants', which are co-owned by Alpiq and other shareholders. We understand that the risk of failure of these partner plants is mitigated by mutual guarantees between Alpiq and the other shareholders to buy electricity at cost from these partner plants. As these shareholders include entities with a solid credit rating and/or with sovereign backing such as the state-owned Swiss Federal Railways and other regulated cantonal and city utilities, the operations of these partner plants can be considered as relatively low risk.
- Third, we understand that Alpiq's wind farms in Italy are regulated and receive preferential feed-in tariffs from the regulator, and that Alpiq's power plant in Spain receives capacity payments under a long-term contract from the grid. This is consistent with PwC's assessment that 75% of Alpiq's production from the international Renewable Energy Sources business unit benefits from compensation regulation which 'represents a guarantee against market risks'.[31]

4.2 These observations suggest that a significant part of Alpiq's business risk may be relatively low and more akin to that of a regulated utility. On the other hand, it is not clear whether the comparators included in PwC's analysis benefit from the same business risk mitigation factors discussed above. Therefore, PwC's asset beta assumption of 0.6, based on its comparator analysis, may need to be revisited.

4.3 While we have not carried out an in-depth review of the appropriateness of PwC's asset beta assumption of 0.6 for Alpiq, we present the implications of using a lower asset beta assumption for illustrative purposes below. In particular, we have considered the implications of using an alternative asset beta assumption of 0.5, which is the midpoint of the asset beta of Swissgrid

[31] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 16.

(the regulated Swiss transmission operator) of 0.4,[32] and the 0.6 estimate based on PwC's comparator analysis.

5 Conclusion

5.1 For the reasons set out in this note, we are of the view that:

- PwC's estimate of the **country risk premium** of 0.9% is too large, and should be revised downwards to 0.0–0.2%;
- it is inappropriate to include a **small-cap premium** for Alpiq, and so this premium should be excluded from PwC's estimate of Alpiq's WACC;
- PwC's estimate of Alpiq's **asset beta** of 0.6 may need to be revisited and we have presented the implications of using a lower asset beta assumption of 0.5 for illustrative purposes.

5.2 The combined impact of the corrections outlined above is to **reduce PwC's estimate of Alpiq's WACC from 5.7% to 4.3–4.4%** (assuming no change to Alpiq's asset beta) or **3.7–3.8%** (assuming a lower asset beta of 0.5). Based on PwC's own analysis, these corrections to Alpiq's discount rate lead to an **increase in the value of Alpiq's shares from CHF 70.0 per share to CHF 103.7–106.3 per share** (assuming no change to Alpiq's asset beta), or **CHF 119.2–121.8 per share** (assuming a lower asset beta of 0.5). We note that Alpiq's book value per share of CHF 103 as at 31 December 2018 is consistent with the low end of these ranges.[33] These results are summarised in Table 5.1.

[32] Office fédéral de l'énergie OFEN (2019), 'Explications relatives au calcul du taux d'intérêt calculé conformément à l'art. 13, al. 3, let. b, de l'ordonnance sur l'approvisionnement en électricité (OApEl) pour l'année tarifaire 2020', 13 February.
[33] PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 21.

Table 5.1 Comparison of Alpiq's WACC and share valuation

	PwC	Oxera (no change to asset beta)	Oxera (asset beta of 0.5)
Asset beta [A]	0.62	0.62	0.51
Debt to equity ratio [B]	68.3%	68.3%	68.3%
Equity beta [C] = [A] x (1 + [B])	1.04	1.04	0.86
Equity risk premium [D]	5.8%	5.8%	5.8%
Risk-free rate [E]	0.1%	0.1%	0.1%
Country risk premium [F]	0.9%	0.0–0.2%	0.0–0.2%
Small-cap risk premium [G]	1.4%	0.0%	0.0%
Cost of equity [H] = [C] x [D] + [E] + [F] + [G]	**8.4%**	**6.2–6.4%**	**5.1–5.3%**
Post-tax cost of debt [I]	1.6%	1.6%	1.6%
Proportion of debt financing [J]	40.6%	40.6%	40.6%
WACC [K] = [I] x [J] + [H] x (1 – [J])	**5.7%**	**4.3–4.4%**	**3.7–3.8%**
Share valuation (CHF)[1]	**70.0**	**103.7–106.3**	**119.2–121.8**

Note: [1] PwC's analysis shows that a reduction of 0.1% in Alpiq's WACC increases the share price by 3.7%. Assuming a linear extrapolation of this result, this implies that a reduction of 1.0% in Alpiq's WACC increases the share price by 37%.

Source: Oxera analysis; PwC (2019), 'Fairness Opinion Alpiq Holding SA', 9 July, p. 27.

SIGNED DATED

Professor Julian Franks 16 August 2019

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Julian is a Partner at Oxera and a Professor of Finance at the London Business School, and was a Visiting Professor at the University of California at both Berkeley and Los Angeles. He has been an adviser to various regulators and competition authorities in the UK including the Competition Markets Authority (CMA), Ofcom and Ofwat. Julian has previously acted for a listed company in supplying a fairness opinion to shareholders regarding the valuation of a portfolio of PFI assets. He has also acted as a named expert in various arbitration cases, including for the UK government at the World Court in The Hague in an inter-governmental dispute with the USA. He has also been appointed by the UK government to various committees of inquiry including those concerned with bankruptcy reform, improving access to non-bank sources of finance, and the governance committee for company law reform.

Mohammed is a Senior Consultant at Oxera who specialises in valuation and quantum estimation in the context of commercial disputes. Mohammed has led the Oxera teams working on a large number of cases involving the valuation of companies and damages resulting from breach of contract, contract termination and lost profits claims, reputational harm, and shareholder disputes. Mohammed has vast experience in international arbitration cases under the rules of the LCIA and the ICC as well as commercial disputes in front of commercial courts. Mohammed also has significant experience in advising corporates, lawyers, and member states on state aid matters and wider corporate finance and regulatory finance issues.